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Research paper

Cognitive Behavioral Social Rhythm Group Therapy for Veterans with posttraumatic stress disorder, depression, and sleep disturbance: Results from an open trial

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ABSTRACT

Introduction: Cognitive Behavioral Social Rhythm Therapy (CBSRT) is a group psychotherapy tailored for Veterans with Posttraumatic Stress Disorder (PTSD), Major Depressive Disorder (MDD), and sleep disturbances. The aims of this study were to introduce and present initial outcomes of Cognitive Behavioral Social Rhythm Therapy (CBSRT), a 12-week skills group therapy designed to improve sleep and mood by reducing chaotic or isolated lifestyles in Veterans with PTSD.
Methods: Twenty-four male Veterans with at least moderate PTSD and MDD participated in this open trial. Main outcomes were the daily sleep diary for sleep disturbances, the Clinician-Administered PTSD Scale (CAPS) for PTSD, and the Hamilton Depression Rating scale for MDD.
Results: Veterans improved on all measures (a) with large within subject effects on PTSD symptoms, MDD symptoms, and sleep quality, and (b) with 46–58% of the sample receiving clinically significant benefits on MDD and PTSD symptoms respectively. The consistency of social rhythms was associated with the average reduction in global CAPS scores over time. Only 13% of participants dropped-out of the group therapy prematurely suggesting that this new group therapy is relatively well-tolerated by Veterans.
Limitations: Future research that employs a control condition is necessary to establish efficacy of CBSRT.
Conclusions: Data from this initial pilot study demonstrate that CBSRT may be an effective group treatment option for Veterans presenting with all three symptom complaints. These data also suggest that daily routine may be an important mechanism to consider in the treatment of PTSD symptoms comorbid with depression.

1. Background

Trauma has long-lasting psychological effects for significant numbers of Veterans (Koenen et al., 2003; Solomon and Mikulincer, 2006). Between 9% and 14% of Veterans develop posttraumatic stress disorder (PTSD) within one year of returning from combat (Thomas et al., 2010). Individuals exposed to a severe stressful life event also frequently develop Major Depressive Disorder (MDD; Brown and Harris, 1978), which may in part explain the high comorbidity (50–80%) between PTSD and MDD (Hankin et al., 1999; Kessler et al., 1995). As compared to individuals with PTSD, patients with comorbid PTSD and MDD have more severe anxiety symptoms (Kramer et al., 2003), worse health-related quality of life and a higher rate of hospital re-admissions (Kramer et al., 2003), and an increased suicide risk (Conner et al., 2014; Pukay-Martin et al., 2012). They are also more likely to have chronic PTSD (Blanchard et al., 1998). Taken together, these findings suggest that Veterans with comorbid PTSD and MDD may experience debilitating and chronic difficulties (Kessler et al., 1995;

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Merikangas et al., 2007; Thomas et al., 2010).

Individuals with PTSD and MDD also have disturbances in their sleep. Approximately 44–90% of individuals with PTSD alone experience insomnia symptoms and 52–87% of individuals with PTSD alone experience nightmares (Harvey et al., 2003; Kobayashi et al., 2007). An estimated 50–90% of individuals with MDD alone endorse disturbed sleep, which may emerge as a prodrome in addition to its apparent bidirectional relationship with depression symptoms (see Tsuno et al., 2005 for review). No estimates are currently available about the prevalence of comorbid PTSD, MDD, and Insomnia Disorder in Veteran populations. Some research investigating the sleep profiles of Veterans with both PTSD and MDD suggests that the prevalence of both disorders results in worse sleep as compared to PTSD alone (Dow et al., 1996; Leskin et al., 2002) and depression alone (Kelly et al., 2009). Insomnia is a frequent residual symptom of successful PTSD therapy (Galovski et al., 2009; Zayfert and DeViva, 2004), and it may have a role in PTSD treatment nonresponse (Van der Kolk et al., 1996), just as it does in depression treatment nonresponse (Thase et al., 1996).

To our knowledge, there are no current, evidence-based treatments designed to specifically address sleep and depression in Veterans with PTSD. The majority of psychotherapy treatment studies with trauma survivors have tested treatments in patients with PTSD only or PTSD with heterogeneous comorbid psychiatric disorders (Bradley et al., 2005). Additionally, many PTSD treatment studies use suicidality as a potential exclusion criterion (Bradley et al., 2005), which may eliminate an important and severe subset of PTSD patients with MDD.

In addition, more research is needed to provide efficacious group therapy options for Veterans with PTSD (The Management of Post-Traumatic Stress Working Group, 2010). Psychoeducation on PTSD symptoms and treatment options is commonly conducted as an introductory course for Veterans entering VA mental health clinics or seeking PTSD treatment for the first time (Rosen et al., 2004; Sloan et al., 2012), but the efficacy of this approach is unknown. The International Society for Traumatic Stress Studies (ISTSS) guidelines for PTSD treatment suggest that group therapies are understudied but potentially useful in the treatment of PTSD, as they have the ability to promote interpersonal engagement to address avoidance that is inherent to the disorder (Foa et al., 2011).

To address these treatment needs, we developed Cognitive Behavioral Social Rhythm Therapy (CBSRT), a manualized, present-focused skills group therapy designed specifically for a subset of Veterans with moderate to severe PTSD, MDD, and sleep disturbances. Cognitive Behavioral Social Rhythm Therapy is based on the social rhythm model of depression (see Fig. 1). According to this model, a stressful life event interrupts regular exposure to social *zeitgebers*, or external environmental cues that may assist in synchronizing the circadian clock. This disruption then leads to instability in biological rhythms and disrupted sleep in vulnerable individuals (Ehlers et al., 1988). When this model was developed, it was widely thought that social *zeitgebers* were the primary mechanisms of entrainment. Haynes et al. (2005) modified this model to include exposure to natural light, now widely considered the most powerful *zeitgeber*. Habitual behaviors may be *zeitgebers* when light is low (Aschoff et al., 1971; Klerman et al., 1998; Mrosovsky, 1988). They may also alter retinal exposure to light (e.g., via photoperiod length, light exposure intensity) or the physiological response to light (e.g., via attenuating expression of Per1, increasing sensitivity to light), impacting entrainment indirectly.

Veterans with PTSD and MDD are well-suited for CBSRT given the unique symptoms they experience. They have been exposed to a severe life event (e.g., combat), and they experience disturbances in sleep (Hoge et al., 2007; Neylan et al., 1998; Pigeon et al., 2013), circadian rhythms (Yehuda, 2001), and mood (Wisco et al., 2014). Circadian desynchronization, sleep deprivation, insomnia, and fatigue (Beaumont, 2007) may result from heightened levels of vigilance required from extended deployments in a combat setting (Litz, 2007). Research suggests that individuals with depression (Haynes et al., 2005; Szuba et al., 1992) and anxiety disorders (including PTSD; Shear et al., 1994) have less consistent social rhythms, or habitual daily activities and interactions. New treatments and treatment courses designed specifically to target daily, habitual behaviors in this depressed and behaviorally dysregulated subset of patients with PTSD may be of specific benefit to the VA population.

Consistent with the social rhythm model, CBSRT was developed to facilitate readjustment after trauma through multiple possible mechanisms of change, including stabilizing social rhythms, increasing the strength and regularity of the sleep/wake cycle (via treatment of insomnia, nightmares, dysfunctional sleep-related thoughts), increasing ambient light exposure, and increasing the amplitude of circadian rhythms (with focus on the activity rhythm). It was designed to address symptoms seen in both PTSD and MDD, including isolation, inconsistent sleeping, eating, bathing, and activity patterns. It was developed with the idea that intervention in these areas would lead to improvement in symptoms and greater mood regulation abilities that would increase the likelihood of later successful engagement in PTSD therapies for some Veterans with MDD.

To our knowledge, no research has systematically tested social rhythm therapies (or chronobiologically-informed scheduling) or behavioral sleep therapies in Veterans with PTSD, MDD, and sleep disturbances. Additionally, no studies have evaluated a present-focused behavioral *group* therapy for Veterans that has the

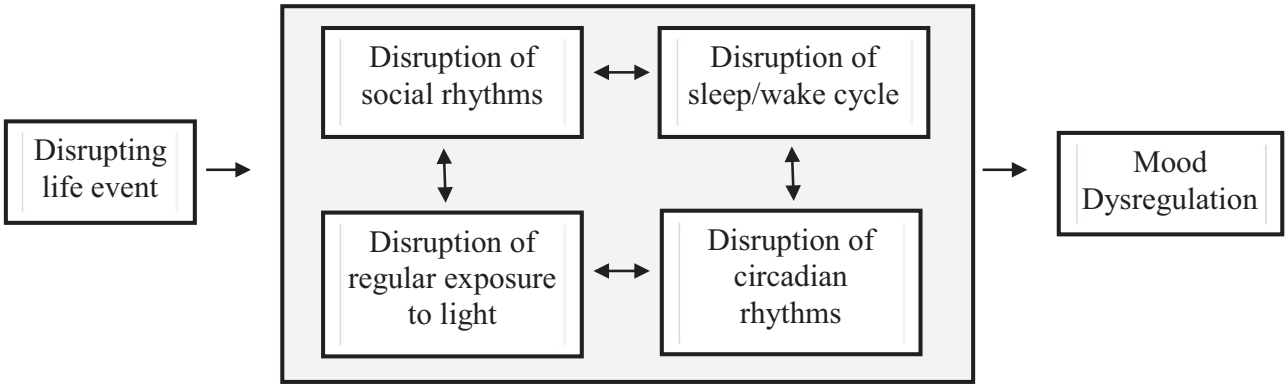

Fig. 1. Social rhythm model of mood dysregulation in vulnerable individuals, modified. This model is based on the original theory presented by Ehlers et al. (1988), later modified by Haynes et al. (2005).