to reduce the impact of trauma. In this study, we examined objective 24-hour activity patterns and APNS in the weeks following a traumatic event.

Methods: Participants (n = 2,021) were recruited from emergency departments after experiencing trauma. Over 8 weeks, they wore wrist accelerometry devices to measure 24-hour activity patterns, and completed surveys assessing 10 Research Domain Criteria (RDoC) constructs associated with APNS. We aimed to 1) examine the relationship between 24-hour activity patterns and APNS symptoms, and 2) examine how 24-hour activity patterns changed over time in relation to changes in APNS over the 8-week period. A bivariate linear mixed model approach was used to model the cross-sectional and longitudinal associations with each of the 10 RDoC constructs.

Results: Overall, participants reporting more pain in the weeks following trauma also showed objectively less 24-hour activity variance (Pearson correlation = -0.14, p = 0.001). An improving pain trajectory over the 8 weeks was associated with increases in daily activity (Pearson correlation = -0.14, $p < 0.001$) variability in activity (Pearson correlation = -0.12, $p < 0.001$), and increases in sleep consolidation (Pearson correlation = 0.013, $p < 0.001$). Within subjects, an increasing number of transitions between sleep and wake over the study period was also associated with worsening self-reported anxiety (Pearson correlation = 0.06, p = 0.003) and sleep problems (Pearson correlation = 0.10, p = 0.003)

Conclusion: After a traumatic event, several 24-hour activity biomarkers were associated with APNS. Results suggest pain, activity, and sleep highly influence each other in the weeks following a traumatic event, and 24-hour activity patterns should be considered when making predictions about who is likely to recover from trauma. Targeted interventions for sleep and pain may promote recovery in the other domains.

Support (If Any): NIMH U01MH110925, US Army Medical Research and Material Command, the One Mind Foundation, The Mayday Fund, Verily Life Sciences. LDS is supported by a Department of Veterans Affairs Career Development Award (IK2CX002032).

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SCRIPT-DRIVEN IMAGERY IN PTSD: COMPARING REACTIVITY TO IMAGERY OF TRAUMA MEMORIES TO IMAGERY OF TRAUMA-NIGHTMARE MEMORIES

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Introduction: Prolonged Exposure (PE) therapy produces therapeutic fear extinction via imaginal exposure to trauma memories. However, traumatic events that occurred in the distant past and the associated memories may become distorted or habituated. Posttraumatic nightmares are more recent, potentially salient, and may better support extinction learning. Physiological responses to imagery of a trauma and nightmare related to this trauma were compared to each other and to neutral imagery.

Methods: Twelve participants (mean age=26.16, 11 female) with PTSD (mean CAPS-5=27.83) and frequent trauma-related nightmares wrote accounts of their trauma. Participants then completed a 14-day sleep-monitoring period with diaries, actigraphy and two nights of ambulatory PSG. Participants narrated a nightmare report into an audio recorder when awoken by a nightmare or when recalled upon awakening. Two pairs of short narratives were created from the written account of the trauma and recording of a nightmare most similar to the trauma. These narratives (scripts) were audio-recorded by an investigator. Participants then underwent two script-driven imagery (SDI) sessions, one hour apart, during which they listened to either their two trauma-memory or their two nightmare-memory scripts (counterbalanced across participants) with 3 interspersed neutral scripts. Each script in an SDI session included baseline, listening, and imagery periods (approximately 30 sec apiece). Skin conductance (SC), heart rate (HR), and corrugator electromyography (EMG) biosignals were continuously recorded throughout each SDI session. For each script, HR, SC, and EMG means during the baseline period were subtracted from their respective imagery-period means. These difference scores were square-root transformed and analyzed by ANOVA with Type (trauma vs. nightmare) and Valence (trauma/nightmare vs. neutral) factors.

Results: Biosignals from scripts of both Types (trauma and nightmare) significantly exceeded those from their respective neutral scripts [HR:$F(1,11)=23.42$, $p=0.0005$; SC:$F(1,11)=9.53$, $p=0.01$; EMG:$F(1,10)=8.0$, $p=0.018$]. However, biosignals from trauma and nightmare scripts did not differ (p's>0.39) nor did the Type x Valence interactions (p's>0.10).

Conclusion: Physiological reactivity during imagery of a trauma memory and a trauma-related nightmare both significantly exceeded reactivity to neutral scenarios. Nightmare-memory and trauma-memory imagery produced similar reactivity. Thus, imagery of nightmares have potential utility as alternative PE stimuli.

Support (If Any): This project was supported by NIMH grant 1R21MH121832-01A1 to E.P.S.

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CPAP ADHERENCE AND RESPONSE TO COGNITIVE PROCESSING THERAPY FOR PTSD IN VETERANS WITH OBSTRUCTIVE SLEEP APNEA

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Introduction: Cognitive processing therapy (CPT) is a recommended first-line psychotherapy treatment for veterans with PTSD. Veterans with PTSD are at higher risk for sleep disorders including obstructive sleep apnea (OSA), and there is evidence that OSA can exacerbate PTSD and vice versa. Several studies have shown that CPAP use is associated with improvement in PTSD symptoms. CPT is an effective, yet time and resource intensive treatment option, making it critical to identify potential health factors impacting its efficacy. This retrospective chart analysis of veterans diagnosed with OSA and PTSD evaluated the effect of CPAP adherence on response to CPT.

Methods: Medical records of patients seen in a VA Health Care System were reviewed to identify veterans diagnosed with OSA and PTSD that received between 1-12 sessions of CPT with documented weekly PTSD Checklist for DSM-5 (PCL-5) scores, Patient Health Questionnaire-9 (PHQ-9) scores, and were issued a CPAP machine for OSA. Data collected included demographics, CPAP adherence (mean CPAP use, % days with greater than 4 hrs./night of CPAP use, mean residual apnea hypopnea index, mask leak), and PTSD symptoms (PCL-5 and PHQ-9 scores). For each outcome, we estimated a linear mixed-effects model; models for PCL-5 allowed heterogeneous residual variances for each veteran.