INCIDENCE AND FREQUENCY OF TRAUMATIC BRAIN INJURIES AFFECT SLEEP IN MILITARY PERSONNEL: A CRITICALLY APPRAISED TOPIC

O’Brien D, Cacolice PA: Duquesne University, Pittsburgh, PA

Context: As our awareness of mild traumatic brain injuries (mTBI) in athletics has evolved, a greater appreciation of mTBI in military personnel has likewise developed. Adequate volume and quality of sleep has been recognized as an essential treatment component to mTBI in athletics. Irregular sleep however, is common to military schedules, especially in a combat theatre. Any compounding factor to sleep parameters including prior history of mTBI itself may even further limit healing from TBI. Understanding how prior history and incidence of mTBI may affect sleep parameters and thus recovery is of value to clinicians treating this population. **Objective:** The aim of our critical appraisal was to understand the effect of traumatic brain injuries (TBIs) on irregular sleep in military personnel. **Design:** We conducted a PICO-based search using the following parameters: Population: military, Intervention: (TBIs OR concussions OR head trauma), Comparison: military AND civilian, Outcome(s): (sleep OR sleep disturbance). For our search we utilized the following databases: PubMed, SportsDiscus, CINAHL, ProQuest, PEDro Database, Google Scholar, and Cochrane Library. The resulting articles were classified according to the Level of Evidence. **Setting:** Our investigation was a review of studies performed at in- and out-patient medical facilities. **Patients or other Participants:** Active duty military personnel and military contractors. **Interventions:** incidence of mTBI. **Main Outcome Measures:** Inclusion factors included articles with a CEBM Level of Evidence 1 or 2, primarily addressing insomnia, sleep disorders, and mTBI’s. Exclusion factors included non-military populations, or studies published earlier than 2011. **Results:** In all three of the selected sources, individuals with TBIs reported significantly poorer sleep quality. Sleep quality directly correlated with the number of TBIs; patients who sustained a greater number of TBIs experienced more severe sleep disorders. In fact, approximately four times as many patients with a single TBI and 10 times as many patients with multiple TBIs exceeded the threshold for clinical insomnia. Insomnia, PTSD, and pain co-occurred in 51.8% of military veterans in the studies. **Conclusions:** Evidence shows that TBIs continue to be prevalent in the military personnel. Furthermore, the impact of TBI on sleep worsens as individuals experience multiple TBI. Without adequate sleep following TBI, military personnel will struggle to make full recoveries. This information should be applied to all clinical practices and should focus on sleep patterns following TBIs. Future research efforts will need to address TBI-related sleep deficiencies in this population and how to improve their recovery. **Word Count:** 396