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# Sleep disturbance among Iranian combat veterans with Chronic PTSD due to combat trauma

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## Abstract

**Background:** Post traumatic stress disorder (PTSD) was first identified among veterans of World War II with a prevalence of 10-67%. It is a disorder caused by the exposure to a traumatic event and characterized by a persistent reexperiencing of the event, persistent avoidance of trauma associated stimuli.

**Method and materials:** We enrolled the patients whom the diagnoses were confirmed as PTSD according to the Structured Clinical Interview for DSM-IV (SCID) (American Psychiatric Association 1994) criteria considering non-sleep PTSD symptoms.

**Results :** All PTSD patients were male. Mean age (SD) of PTSD patients and control group were 41.36 (5.5) and 40.9 (6.2) years respectively ( $P>0.05$ ). Table 1 shows the distribution of PTSD patients according to groups of age, education, severity of injury, number of injuries, and years served in war and also their corresponding PSQI scores. Mean PSQI score was not significantly different within mentioned groups ( $P>0.05$ ). Global PSQI score was 4.94 (2.52) and 11.60 (4.21) in control group and PTSD group respectively ( $P<0.001$ ). All 7 components of Subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, sleep medication and daytime functioning were significantly higher in PTSD group comparing control.

**Discussion:** According to our findings, poor quality of sleep is an issue that should be considered in PTSD veterans with more intention. Many of these veterans may benefit from pharmacotherapy. However, different treatment modalities should be studied more.

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**Keywords:** Sleep disturbance, Chronic PTSD, Iranian combat, combat trauma.

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## 1. Introduction

Post traumatic stress disorder (PTSD) was first identified among veterans of World War II with a prevalence of 10-67%. It is a disorder caused by the exposure to a traumatic event and characterized by a persistent experiencing of the event, persistent avoidance of trauma associated stimuli, numbing of general

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responsiveness, and persistent symptoms of increased arousal<sup>4</sup>. Impaired sleep (disturbing dreams and insomnia) is a common complaint among these patients<sup>5</sup> hence, disturbed sleep has been called a hallmark of PTSD<sup>6</sup>. However, sleep complaints are not necessary for the diagnosis of PTSD, as diagnostic criteria can be fulfilled in their absence<sup>7</sup>. Alternatively, laboratory sleep studies in PTSD have not provided consistent evidence of sleep disturbance, despite apparent sleep complaints<sup>5</sup>.

Poor sleep quality has been associated with increased tension, irritability, depression, confusion and generally lower life satisfaction<sup>8</sup>. The Pittsburgh Sleep Quality Index is considered to be the most effective instrument for detecting sleep disorders in adults<sup>9,10</sup>. In this study we tried to determine the impact of PTSD on sleep disturbance in Iranian disabled veterans served in Iran-Iraq war. Most of studies in this field are distorted by using of insufficient sample size, considerable time passed since trauma, old age of patients, presence of comorbid disorders (i.e. mood disorder, substance abuse and somatic disorders) and lacking of documents about trauma. To address these problems we used a much bigger sample size of veterans with almost recent exposure to trauma, younger age and free of sleep affecting psychiatric or somatic disorders. In addition to these, in the light of presence of different perception of sleep and its problems among cultures, we used an aged matched control group to minimize this effect.

## 2. Method and Materials

One hundred thirty combat veterans with PTSD proved by supreme commission of disability were recruited from outpatient clinics of Baqiat-Allah medical science university. Inclusion criteria was at least one injury caused by bullet or explosives, participation in war theatre  $\geq 3$  months, time elapsed since trauma less than 25 years and current age less than 50 years. We enrolled the patients whom the diagnoses were confirmed as PTSD according to the Structured Clinical Interview for DSM-IV (SCID) (American Psychiatric Association 1994) criteria considering non-sleep PTSD symptoms. Subjects with comorbidities of substance dependence, personality disorders, and those with somatic and other psychological disorders affecting sleep were excluded. Potential subjects with evidence of medical disease and/or chronic pain that could influence sleep were excluded, as were individuals with risk factors for obstructive sleep apnoea (frequent snoring, obesity, or partner reports of interrupted breathing during sleep).

Control data were obtained from 130 age- and sex-matched healthy subjects. They recruited from university personnel.

We used the standard Farsi version of PSQI questionnaire to assess sleep disturbance. PSQI is a self-administered questionnaire that assesses sleep quality and quantity during the previous month. The PSQI contains 19 items that produce a global sleep quality score from 0 to 21. A higher global PSQI score indicates a poorer sleep quality. A PSQI score  $< 5$  is considered good sleep quality<sup>11</sup>.

The independent variables used to predict sleep disturbances were age, education, severity of injury (s), number of injury (s), year served in war gathered from patient's official records.

Statistical analysis was performed by SPSS package (SPSS for windows v. 11.5) to compare global PSQI Score and its 7 components in PTSD patients and control group. Bivariate analysis performed to determine effect of each independent variable on PSQI Score. Level of significance considered 0.05.

## 3. Results

All PTSD patients were male. Mean age (SD) of PTSD patients and control group were 41.36 (5.5) and 40.9 (6.2) years respectively ( $P > 0.05$ ). Table 1 shows the distribution of PTSD patients according to groups of age, education, severity of injury, number of injuries, and years served in war and also their corresponding PSQI scores. Mean PSQI score was not significantly different within mentioned groups ( $P > 0.05$ ). Global PSQI score was 4.94 (2.52) and 11.60 (4.21) in control group and PTSD group respectively ( $P < 0.001$ ). All 7 components of Subjective sleep quality, sleep latency; sleep duration, habitual sleep efficiency, sleep disturbances, sleep medication and daytime functioning were significantly higher in PTSD group comparing control. ( $P < 0.001$ ) (Table 2) Table 1-Demographic data of PTSD patients.

#### 4. Discussion

In modern combats veterans experience less physical injuries. However, managing of Psychological problems due to exposure to extreme traumatic events among previous combat veterans has become a major concern.<sup>12</sup> In this study we found that PTSD veterans suffer from a poor quality of sleep comparing to normal population. Additionally, PTSD veterans had lower score in all 7 subcomponents of sleep quality comparing controls especially in sleep latency area. Habitual sleep efficiency seems to be severely affected in PTSD group. These findings are in contrast with findings of most of studies that describe sleep maintenance impairments as the main factor affecting quality of sleep.<sup>5</sup> (sleep find young adult). Our findings show that age, education, severity of injury, number of injury(s) and years served in war has no relationship to PSQI score. Considering severity of injury, number of injuries and years served in war as measures for combat exposure, It is against the declaration of Neylan et al<sup>13</sup>. This may be explained by the fact that our measures for combat exposure are not valid or may be distorted by other variables. There is also another fact that may cause our findings to vary from other studies, most of our veterans participated in war voluntarily and their motives were spiritual values without considering materialistic gains so their perceptions from stressful situations may be different.

There are some limitations of this study that are a consequence of the design of study, all of the veterans were selected from those injured in war for easier access and enrolment in study whereas all of controls were healthy subjects. However, veterans with physical conditions that may affect quality of sleep were excluded. Moreover, presence of polysomnographic data may further support the validity of data.

According to our findings, poor quality of sleep is an issue that should be considered in PTSD veterans with more intention. Many of these veterans may benefit from pharmacotherapy. However, different treatment modalities should be studied more.

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