

Sleep disturbances in older adults following traumatic brain injury



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Background and purposes

- Sleep disturbances are common in patients with traumatic brain injury (TBI) but knowledge regarding sleep disturbances in **older adults with TBI** remains incomplete.
- To examine the **prevalence of sleep disturbances** in older adults with TBI compared with age- and gender-matched controls.
- To determine the **risk factors** for post-TBI sleep disturbances and its impacts on **quality of life**.

Methods

- A cross-sectional study at medical centers and communities settings in the northern Taiwan.
- Older adults (aged > 65 years) with TBI over 3 month and age- and gender-matched non-injury controls were included.
- Measures:
 - ✓ Insomnia: Athens Insomnia Scale
 - ✓ Excessive daytime sleepiness: Epworth Sleepiness Scale
 - ✓ Obstructive sleep apnea: STOP-bang
 - ✓ Quality of life: Quality of Life after Brain Injury
- Multivariate linear regression models were used

Results

- Sample size: **60** in each group
- Mean age and male %: 73.1 and 55 (TBI) vs. 72.2 and 52 (Control)
- TBI cases had greater pain, depression, nocturia, and sleep disturbances that controls did.
- TBI cases had higher prevalence of insomnia, excessive daytime sleepiness, and obstructive sleep apnea than controls did (all $p < 0.01$).
- Being male, pain, depression, and insomnia were risk factors for post-TBI sleep disturbances.
- AIS and STOP-bang scores negatively correlated with quality of life.

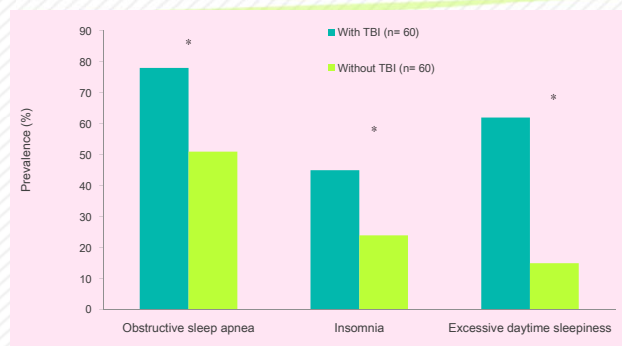


Table 1 Risk factors for sleep disturbance and quality of life in older people with TBI (n = 60)

Variables	OR	(95% CI)	
<i>OSA</i>			
Male	2.95	(1.47 to 5.85)	
<i>Insomnia</i>			
Pain severity	1.40	(1.03 to 2.14)	
HADS-Depression	1.29	(1.11 to 1.61)	
<i>Excessive daytime sleepiness</i>			
AIS score (insomnia)	1.46	(1.20 to 2.02)	
<i>Quality of life</i>			
	B	SE	P
AIS score	-1.46	0.5	0.005
STOP-Bang score	-3.78	1.29	0.005

OSA model: adjusted for age and BMI. Insomnia model: adjusted for alcohol consumption, exercise, hypnotic use, nocturia, GCS, HADS-Anxiety. ESS model: adjusted for age, BMI, comorbidity, exercise, nocturia, pain, LOC, HADS-depression, STOPBANG. QoL model: adjusted for nocturia, LOC, HADS-depression.

Conclusions

- Sleep disturbances are common in older adults following TBI and impact their quality of life.
- Being male, pain, depression, and insomnia symptom contribute to post-TBI sleep disturbances.
- Interventions may target post-TBI sleep disturbances to improve the QoL of older adults.

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