

## THE ASSOCIATION OF NOCTURIA AND DAYTIME SLEEPINESS SYMPTOMS

### Hypothesis / aims of study

Nocturia is one of the main symptoms causing significant sleep disturbance, including sleep interruptions. Such sleep interruptions may cause problematic daytime sleepiness symptoms. The objective of this study was to investigate the association of nocturia and daytime sleepiness symptoms.

### Study design, materials and methods

A multi-center, cross-sectional survey was conducted in people who visit the hospitals for routine health check-up. In the interview, demographic and sleep-related data including nocturia, sleep quality, and daytime sleepiness during last one month were collected. Nocturia group was defined as those waking up at night more than two times an average during last month. Data was compared between control and nocturia groups.

### Results

Among the total 1400 persons surveyed, 461(32.9%) were included in nocturia group. In sixties, 66.5% were included in nocturia group while 11.3% in twenties and 10.4% in thirties. Routine daily working was interfered by daytime sleepiness in 22.4% of nocturia group and 10.3% of control group. People in nocturia group showed significantly higher daytime sleepiness during many specific conditions such as waiting in sitting positions, using public transport on sitting or standing positions and even during conversations. Also 64% of nocturia group had experiences doing actions not to fall asleep while driving a car during last one month. Even worse, 42.2% of nocturia group responded to have fallen asleep incidentally while driving, which was significantly increased compared with the rate of control group (table).

**Table. The comparison of daytime sleepiness symptoms between nocturia and control groups (during last one month)**

Conditions with daytime sleepiness	Nocturia(%)	Control(%)	p-value
Resting on supine position	81.8	76.0	0.028
Watching TV on lying position	80.9	77.4	0.172
Watching TV on sitting position	68.6	43.1	<0.001
Waiting on sitting position	54.6	29.3	<0.001
Reading a book on sitting position	63.4	48.4	<0.001
Using public transport on sitting position	70.3	64.0	0.040
Using public transport on standing position	39.2	24.3	0.001
During conversation	25.6	10.3	<0.001
Doing actions not to fall asleep while driving	64.0	54.9	0.024
Falling asleep incidentally while driving	42.4	22.9	<0.001

### Interpretation of results

People with nocturia more than 2 times reported to have significantly more daytime sleepiness than those without or with nocturia less than 1 times.

### Concluding message

Daytime sleepiness interfere many kinds of daily activities and may have higher risk of travel accidents. Nocturia should be treated more actively especially for those who suffer excessive daytime sleepiness.

### Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Eulji University Hospital IRB **Helsinki:** Yes **Informed Consent:** Yes