

First night effect and burnout

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Conclusion

The first night in a laboratory seems to have a positive effect on sleep fragmentation in burnout patients. This could be a result of sleeping in a new environment not associated with their normal sleep habits. Similar results have been found in insomnia patients.

Introduction

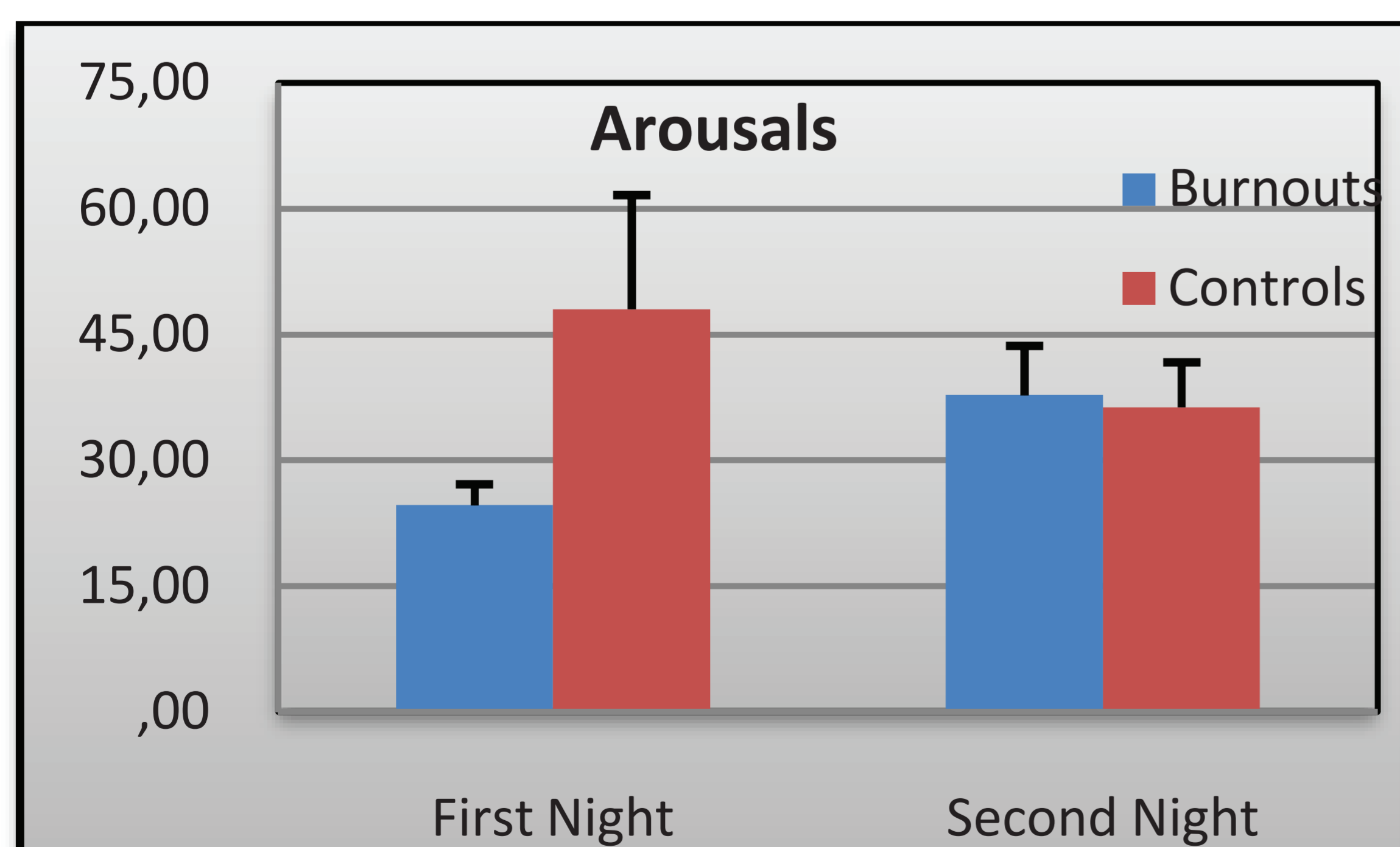
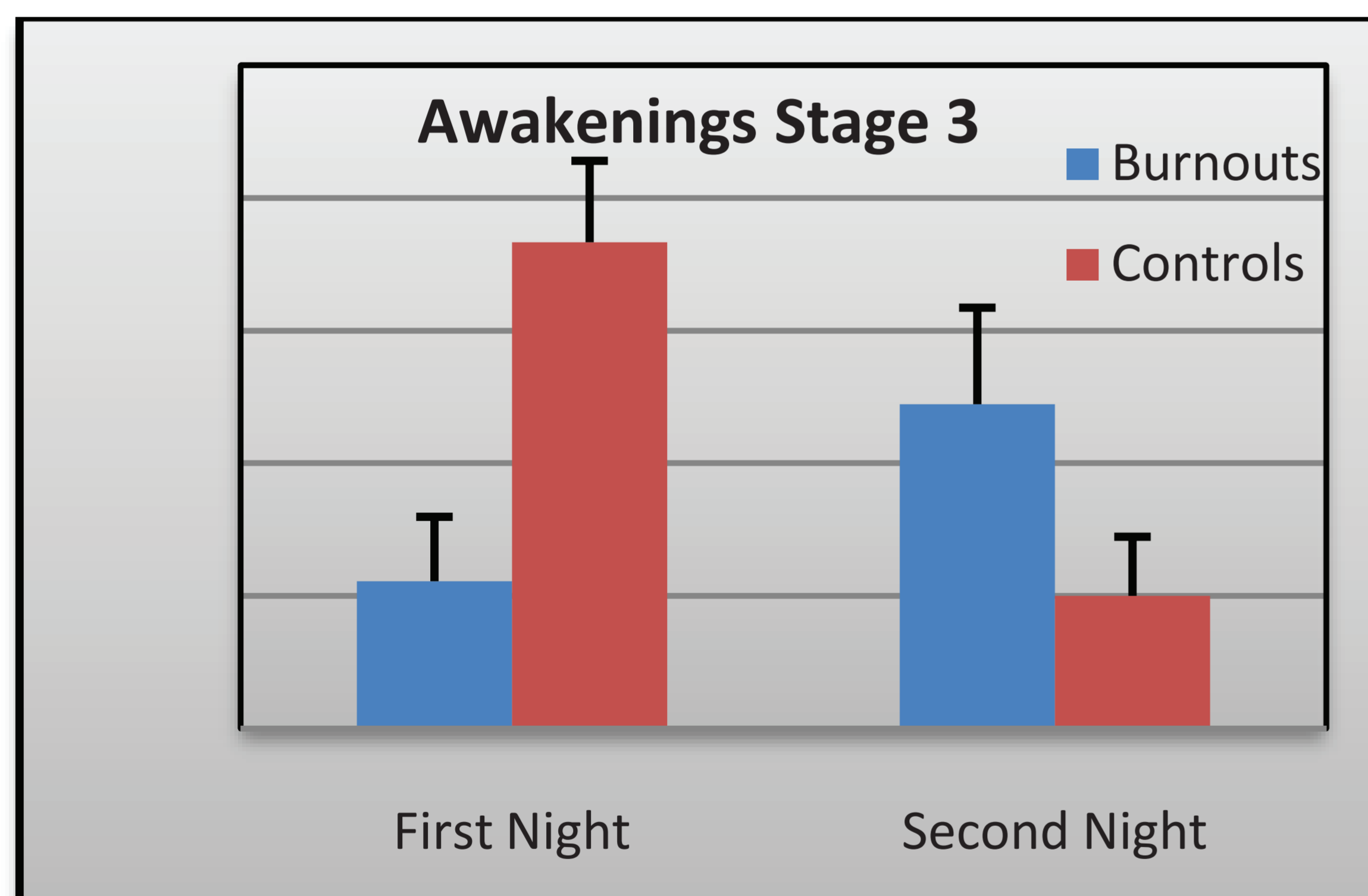
The "first-night effect," is associated with reduced TST and REM sleep, poor SE, increased SL and increased WASO. This might represent an adaptation burden to a new environment and the electrodes as well as the psychological consequence of being observed. Burnout has been associated with disturbed sleep, in particular subjective complaints of trouble falling asleep, non-refreshing sleep and early awakening. Polysomnographic findings in burnouts include more sleep fragmentation, decreased sleep efficiency, increased sleep latency and decreased SWS.

Methods

Sleep was recorded with polysomnography in 9 burnout patients on long-term sick-leave with self rated sleep problems and 6 healthy controls in the sleep laboratory during two occasions one week apart. Participants also kept sleep diaries and wore actigraphs.

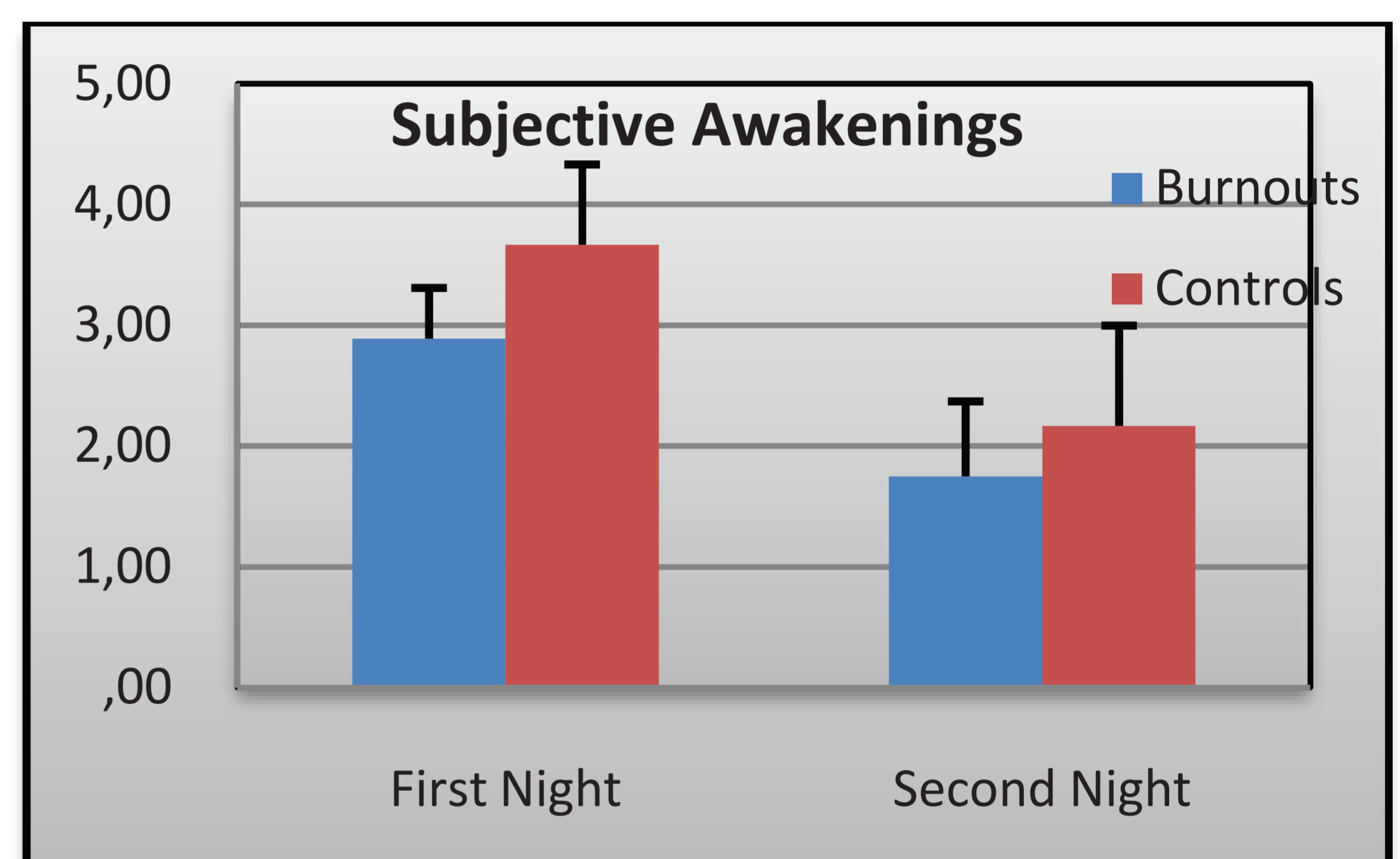
Results

For both controls and burnout patients the percentage of stage 2 sleep was lower and the percentage of stage 1 sleep was higher during the first night of sleep registration. Significant interactions were seen for arousals ($p=0.04$) and awakenings from stage 3 ($p=0.014$). Both arousals and awakenings from stage 3 sleep increased the second night in the burnout group while they decreased in the control group.



Groups differed only with respect to TST ($p<.05$), with shortest value for the burnout group. Individual t-tests show that none of the groups differ in TST or bedtimes between the two occasions. Actigraphy data reveal that there was no difference in neither bedtimes, wakeup times, TST, nor sleep efficiency for the night before the PSG recording between the first and the second night for any of the groups.

There were no differences in the level of stress at bedtime or how the groups subjectively rated their sleep in the sleep diaries. In fact, both groups experienced that their first sleep in the laboratory contained more awakenings than their second night ($p=0.049$). As shown in the PSG results above this was true only for the control group. Both groups also experienced waking up in the morning more difficult on the second night ($p=0.045$).



The burnout patients rated their mood and memory lower than the controls but there were no significant differences between conditions or interaction effect in cognitive functions, mood or the experience of sufficient rest during the day. Both groups rated their health significantly (but modestly) better on the first occasion. They did not differ in their anticipation of the upcoming sleep.

Arousal level and sleepiness were rated every second hour during the day and analyzed as a mean value for the day. There were no differences between the groups or between the two occasions neither in stress levels throughout the day nor in sleepiness.

	First Night		Second Night		Condition	Interaction	Group
	Burnout	Control	Burnout	Control			
	Mean±se	Mean±se	Mean±se	Mean±se	p	p	p
KSS (1-9 sleepy)	5.28±0.2	5.18±0.3	5.9±0.25	4.43±0.49	0.705	0.083	0.133
Arousal (1-9 high)	4.62±0.19	3.75±0.59	4.9±0.37	4.81±0.53	0.132	0.435	0.196
Concentration (1-3good)	2.25±0.22	2.67±0.21	1.88±0.3	2.17±0.4	0.122	0.816	0.302
Memory (1-3good)	2.14±0.26	2.83±0.17	2.14±0.34	2.83±0.17	1	1	0.009
Mood (1-9good)	5.38±0.53	6.83±0.31	4.5±0.68	7.67±0.49	0.974	0.195	0.001
Rest (1-5 good)	3.13±0.26	3.67±0.42	2.63±0.42	3.67±0.42	0.331	0.331	0.138
Health (1-7=good)	5.0±0.29	6.17±0.17	4.25±0.59	5.5±0.34	0.026	0.884	0.043
Next day (1-9good)	7.38±0.24	7.5±0.81	6.63±0.63	8±0.37	0.815	0.255	0.213
Next sleep (1-5good)	4.25±0.2	3.83±0.17	4.38±0.73	3.83±0.48	0.9	0.9	0.346

Discussion

The new environment seems to have a different effect on burnout patients compared to healthy controls and it seems to affect only the physiological sleep. What we generally expect is a more fragmented sleep the first night spent in a sleep laboratory but in burnout patients an opposite pattern was seen. Subjectively however they rated the first night to contain more awakenings compared to the second indicating a less accurate evaluation of their sleep than controls.

CONTACT