

**Materials and methods:** A convenience sampling technique is used to recruit interested primiparous (singleton delivery) mother–newborn pairs at a medical center located in North Taiwan. The newborns are eligible for a 3-year follow-up (from 08/2010 to 07/2013) if the following criteria are met: (1)  $\geq 37$  weeks gestation, (2) birth weight  $\geq 2500$  g, (3) discharge from newborn nursery (baby-room) or neonatal intensive care unit (NICU) without significant neonatal mobility, and 4) nursery or NICU stay less than 7 days. Eligible newborns are scheduled for collecting sleep, environmental light exposure, food intake, and anthropometric data every half-year from the 1st week after birth to 36-months of age. Sleep assessment is performed in the home environment by mother-reported infant sleep diary, the Brief Infant Sleep Questionnaire, and an actiwatch to monitor movement of the child.

**Results:** There were 102 infants recruited at their 1st week after birth. Among the 102 subjects, 46 subjects were followed for 12 months and 11 of them were followed for 24 months. The results show that (1) sleep efficiency, total time in bed, total sleep time and nocturnal sleep hours increase with age; (2) duration of night awakening decreases with age; (3) body weight is negatively correlated with total sleep time, total time in bed, diurnal sleep time and night awakening hours; (4) body weight is positively correlated with sleep efficiency and nocturnal sleep hours.

**Conclusion:** Study results are anticipated to understand the contemporaneous changes in sleep with changes in body weight, and to provide an informative reference regarding the effect of sleep on body weight changes for children aged 0–3 years.

**Acknowledgements:** This study is funded by the National Science Council of Taiwan (NSC 99-2314-B-182-032).

<http://dx.doi.org/10.1016/j.sleep.2013.11.211>

### Cognitive behavioural therapy for comorbid insomnia and depression: a randomised, controlled study

A. Norell-Clarke<sup>1</sup>, M. Jansson-Fröjmark<sup>2</sup>, M. Tillfors<sup>1</sup>, F. Holländare<sup>3</sup>, I. Engström<sup>3</sup>

<sup>1</sup> Örebro University, Center for Health and Medical Psychology, Sweden

<sup>2</sup> Stockholm University, Center for Health and Medical Psychology, Sweden

<sup>3</sup> Örebro County Council, Psychiatric Research Center, Sweden

**Introduction:** Insomnia and depression is a common comorbidity and several pilot studies have demonstrated promising results on both conditions by targeting insomnia only. The aim was to investigate the effects of CBT for insomnia (CBT-I) on both sleep and depressive symptoms in a sample with insomnia comorbid with major depression, minor depression or depressive symptoms, using a randomized controlled study.

**Materials and methods:** 64 participants were recruited through advertisements and randomised to receive either CBT-I or an active control (relaxation training: RT) in groups during four sessions over seven weeks. Insomnia and depressive severity was measured before, during and after treatment, using Insomnia Severity Index (ISI) and Beck Depression Inventory (BDI- II).

**Results:** We used independent *t*-tests to investigate if groups were different on symptom severity prior to treatment. There was no difference between CBT-I and RT regarding insomnia severity ( $t(55) = 1.30, p = 0.20$ ) or depression severity ( $t(53) = -0.77, p = 0.44$ ). Looking at development over time, mixed between-within subjects ANOVAs demonstrated a significant interaction between treatment type and time for both insomnia and depression (ISI:  $F(2,54) = 4.96, p = 0.01$ ; BDI:  $F(2,58) = 2.80, p = 0.07$ ) meaning that CBT-I meant a larger decrease of both insomnia and depressive

severity compared to control treatment. There was also a significant main effect for time with decreasing scores for both groups over time on ISI ( $F(2,52) = 28.86, p = 0.0005$ ) and BDI-II ( $F(2,58) = 7.11, p = 0.002$ ) and a main effect for group on ISI ( $F(1,53) = 9.25, p = 0.01$ ) but not on BDI-II ( $F(1,59) = 0.27, p = 0.60$ ). A six months follow-up assessment is currently conducted and those results will also be presented during the conference.

**Conclusion:** CBT-I was associated with a greater reduction in insomnia and depression severity compared to control treatment. These results show that it is possible to have an effect on both insomnia and depression during a relatively short and cost effective group treatment, targeting insomnia only.

**Acknowledgements:** This research was supported by grants from Stiftelsen Professor Bror Gadelius Minnesfond, Psykiatrifonden, and the Research Committee of Örebro County Council, Sweden.

<http://dx.doi.org/10.1016/j.sleep.2013.11.212>

### Coimbra sleep activation scale (C-SAS): psychometric properties in insomniacs

V. Clemente<sup>1</sup>, J. Almeida<sup>1,2</sup>, I. Martins<sup>1,3</sup>, A. Allen Gomes<sup>2,4</sup>,

J. Moutinho Dos Santos<sup>1</sup>

<sup>1</sup> Coimbra University Hospital Centre (CHUC), Sleep Medicine Centre, Portugal

<sup>2</sup> University of Aveiro, Department of Education, Portugal

<sup>3</sup> University of Coimbra, Faculty of Psychology, Portugal

<sup>4</sup> IBILI (FMUC) – FCT R&D Unit, Portugal

**Introduction:** Hyper-arousal processes are believed to have an important role in the pathophysiology of primary insomnia, and are also a maintaining factor in co-morbid insomnia. Our purpose is to present the psychometric properties of a Portuguese instrument developed to access arousal in insomnia, originated from vast clinical experience, which may be useful in clinical practice: the Coimbra Sleep Activation Scale (C-SAS).

**Materials and methods:** A clinical sample was collected consisting of 100 selected participants (60 M and 40 F), 22–72 years-old ( $M = 45.14, DP = 12.54$ ), followed at a Sleep Medicine Centre, that did not fulfill criteria for a sleep disorder other than insomnia, and with no missing answers on the self-reported measures. The C-SAS is composed by 31 items, each one rated on a 5-point Likert scale, reported to the last month. The Insomnia Severity Index scale (ISI) was used to assess the severity of the insomnia.

**Results:** Cronbach's alpha for the C-SAS was .921, indicating a robust internal consistency. All items, except one, contributed to the internal consistency as shown by alpha values excluding each item. Corrected item-total correlations ranged from .29 to .69. An exploratory factor analysis using Varimax rotation and visual inspection of the Scree plot, yield four meaningful factors explained 51.53% of the total variance. A moderate significant correlation was found between C-SAS and ISI scores ( $r = .298, p < 0.01$ ), suggesting that, although sleep activation is associated with insomnia severity, the two sleep measures have some independence.

**Conclusion:** The results of the present study, albeit preliminary, suggest an adequate validity and internal consistency of the C-SAS in a clinical sample of insomniacs. However, future psychometric studies are needed in order to expand our knowledge about its validity and reliability using other samples.

**Acknowledgements:** Insomniac patients followed at the Sleep Medicine Centre of Coimbra University Hospital Centre (CHUC).

<http://dx.doi.org/10.1016/j.sleep.2013.11.213>