

relatively healthy population it is likely that some of the associations remained undetected; for instance, the prevalence of eating disorders was not high enough to examine DSP reliably.

P061

### CAN NON-PHARMACOLOGICAL INTERVENTIONS FOR NOCTURIA IMPROVE SLEEP OUTCOMES? A SYSTEMATIC REVIEW

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**Background** Nocturia results in reduced sleep due to waking after sleep onset. Treatments for nocturia may result in improved sleep outcomes, but lack of evidence for long-term outcomes has brought pharmacological approaches to managing nocturia in to question. Behavioural approaches for nocturia management have not been assessed for their effects on sleep.

**Objective** To evaluate the evidence for non-pharmacological nocturia treatments on sleep outcomes in adults.

**Search methods:** Four databases (Medline, PsychInfo, Embase & Web of Science) were searched, and relevant results were hand-searched for additional papers. Databases were last searched in November 2018. Selection criteria.

The population was adults; the interventions were non-pharmacological treatments for nocturia; outcomes were measures of sleep; study designs were restricted to randomised controlled trials. No limit was placed on comparison or year of publication. The publication type was restricted to journal articles in English.

**Results** Only 3 studies (N=137) were found to be relevant. No significant differences between intervention and control for nocturia outcomes was found in any study. There were mixed, but mostly null findings for objectively measured sleep outcomes. There was some evidence for subjective sleep outcomes.

**Conclusion** The small, underpowered studies that were found limit the conclusions that can be drawn from this evidence base. Given the loss of sleep quality associated with nocturia is implicated in the development of hypertension and type 2 diabetes, larger, appropriately powered trials should be undertaken.

P062

### NON-PHARMACOLOGICAL INTERVENTIONS FOR SLEEP PROBLEMS IN NEURO-TYPICAL CHILDREN: A SYSTEMATIC REVIEW

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**Context** Sleep disturbances and disorders are common in children. Non-pharmacological interventions for such disorders are recommended by current guidelines. Recent reviews important in this area focus solely on children with neurodevelopmental disorders (Scantlebury et al., 2018). The current review seeks to synthesise the evidence for children in the non-clinical population.

**Objective** To expand upon recent reviews by reviewing non-pharmacological interventions for sleep problems in neuro-typical children.

**Data Sources** Five electronic databases (MEDLINE, EMBASE, PsycINFO, CINAHL and Cochrane databases) were searched using search terms including and relating to 'Children', 'Sleep', 'Behavioural Interventions' and 'Randomised Control Trials'.

**Study selection** Randomised control trials using non-pharmacological interventions with a sleep outcome, for children and adolescents over five years old were included in the study.

**Synthesis.** Results were synthesised narratively in relation to intervention content, delivery and efficacy.

**Conclusions** The studies overall support the recommendation of using non-pharmacological interventions for sleep problems in children. The majority of research to date has investigated the efficacy of cognitive behavioural techniques and was found to be effective in a clinical setting. Future research should evaluate the feasibility and efficacy of these techniques applied on a wider scale and in home settings in order to reach more children.

P063

### SLEEP MATTERS UK: EXPLORING THE RELATIONSHIP BETWEEN SLEEP DIFFICULTIES AND QUALITY OF LIFE IN PRIMARY SCHOOL CHILDREN

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**Background** Sleep efficiency is strongly related to academic performance and behavioural regulation across the lifespan (e.g., Fredriksen et al., 2004; Gruber et al., 2014). Lack of regular bedtimes has been associated with poorer cognitive abilities, including reading (Kelly et al., 2012). However, the relationship between sleep and wellbeing, and the scale of sleep problems in childhood is poorly understood.

**Methods** Data from a representative UK survey (n=1,100) of parents with children aged 6–11 years old asked 60 questions (based upon well validated scales) including the Child Sleep Habit's Questionnaire (CSHQ) and Pediatric quality of life (QoL; measured by PedsQL) and family routines. Data were analysed using ANOVA, correlations and hierarchical linear regression.

**Results** The NHS recommends ~ 10 hours sleep in children of this age. Thirty-six percent of children achieved < eight and 15.2% < seven hours – levels likely to impair daytime functioning, and development. Worryingly, sleep problems of clinical significance (CSHQ) were prevalent (over 90%), Statistically significant relationships between poor sleep and lower QoL were found (r=0.567, p=0.001). Shorter sleep duration was associated with a range of problems at school, eg. difficulties in paying attention in class, forgetting things, keeping up with school work and missing school because of illness (all p <0.001).

**Conclusions and implications** Sleep problems in UK primary school children are widespread, often at levels likely to affect daytime functioning and wellbeing, borne out by the association between poor sleep and poor QoL. Further research is needed including objective sleep measures, and longitudinal evidence in order for causal relationships to be

elucidated. However, it is clear that future research and policy initiatives to encourage families to prioritise sleep in the family routine has the potential to improve not only cognitive and academic outcomes but also child health and wellbeing.

**P064 ASSOCIATION BETWEEN SELF-REPORTED SLEEP-DISORDERED BREATHING AND ESTIMATED CARDIOVASCULAR RISK**

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**Background** Sleep-disordered breathing (SDB) is associated with the increased cardiovascular (CV) morbidity, however, it is not considered in the standard risk stratification scales.

**Purpose** We evaluated the association between self-reported SDB (population-based sample) and two common risk stratification scales: SCORE and ASCVD.

**Methods** We selected 526 adults without known CV-disease (156 males, 30%; mean age 54±6.8years) from the population-based sample (the epidemiological study ESSE-RF). All subjects were interviewed (lifestyle, medical history, complaints) using standard questionnaire. We assessed self-reported snore ('Do you snore?') and sleep apnea ('Do you have sleep apneas?'). Affirmative response was considered diagnostic. The 10-year risk of fatal CV-events was assessed by the SCORE high-risk charts calculator and ASCVD risk estimator.

**Results** Overall, 288 (55%) subjects had snoring, while 27 (5%) reported sleep apneas. Based on the SCORE the participants were divided as following: low risk (<1%) was the most predominant category (35%); moderate risk (≥1% and <5%)-44%, high risk (5–10%)-16%, and very high risk-5%. Based on the ASCVD scale the subjects were divided as following: low risk (<5%) consisted 55,4%; borderline (6–7,4%)-16,3%, intermediate (7,5–19,9%)-23%, and high-5,3%. High-to-very-high SCORE-risk was more frequent in subjects with self-reported snoring compared to non-snorers: 27.1% vs. 7.5%, respectively (Chi-square=44.5,p<0.001). No association was found between self-reported sleep apneas and CV-risk (p>0.05). Similarly, intermediate-high ASCVD-risk is found more often in snorers vs. non-snorers (34.7% vs. 16.4%, respectively,Chi-square=22.5,p<0.001), with no association between self-reported sleep apneas and ASCVD-risk (p>0.05). Logistic multiple regression demonstrated an association between SCORE-risk and self-reported snoring (OR=3.21 95%CI 1.82–5.67,p<0.001); between self-reported snoring and ASCVD-risk (OR=2.24 95%CI 1.35–3.71, p=0.002).

**Conclusions** In Russian population-based sample self-reported snoring (unlike self-reported sleep apnea) is associated with the increased 10-year risk of CV-events independently of the risk stratification scale. The lack of association between CV-risk and sleep apnea might be related to the subjective assessment.

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**P065 SLEEP-WAKE CYCLE AND MELATONIN LEVELS IN PATIENTS WITH DISORDERS OF CONSCIOUSNESS**

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**Background and aims** Sleep is considered to play an important role in neuroplasticity and posttraumatic brain recovery. The assessment of sleep structure and sleep-wake cycle in subjects with disorders of consciousness (DOC) might be useful for predicting prognosis and treatment approach modification. In our study we assessed sleep structure and sleep-wake cycle by long-term (≥24h) polysomnography (PSG), melatonin and stress hormones levels in DOC patients - unresponsive wakefulness syndrome (UWS) and minimally conscious state (MCS). **Methods** We included 27 patients (22–57 years old). Median time duration after the brain injury constituted 11 (1–96) months. We applied Coma Recovery Scale (CRS-R) for behavioral assessment and diagnosed UWS in 7 subjects and MCS in 20 patients (traumatic brain injury was the underlying reason in 20 subjects, hypoxia – in 5, other causes were verified in 2 cases). The full in-hospital attended PSG (Medicom, Russia) was recorded during 24 hours. Blood sampling for melatonin were evaluated 5 times a day (8.00, 15.00, 21.00, 00.00, 3.00), urine samples for melatonin were taken twice (day and night).

**Results** All (100%) patients demonstrated irregular sleep-wake cycle and fragmented, abnormal sleep structure, while 85% patients had normal melatonin level (within the reference values). Deep sleep was absent in 25% cases. REM sleep episodes, despite decreased duration, were present in the majority of patients (87%). There was no significant correlation between melatonin level and PSG parameters.

**Conclusion** In our study, DOC patients had irregular sleep-wake cycle and sleep structure violations. However, sleep-wake changes do not seem to be associated with the disorders of melatonin metabolism.

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**P066 THE ASSOCIATION BETWEEN THE LEVELS OF BRAIN-DERIVED NEUROTROPHIC FACTOR AND STRUCTURAL AND FUNCTIONAL PARAMETERS OF THE BRAIN IN CHRONIC INSOMNIA VS HEALTHY SUBJECTS**

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**Background** Brain-derived neurotrophic factor (BDNF) plays a crucial role in the neuronal networking and reorganization. BDNF levels are changed in neurological and psychiatric diseases. We assessed BDNF levels in patients with chronic primary insomnia (PI) and their association with the brain metabolism.