O024 | Sleep pattern and body mass index gain in Indigenous Australian children

Y. Fatima[1]; A. Al Mamun[2]; T. Skinner[3]

[1]James Cook University, Mount Isa, Australia; [2]University of Queensland, Brisbane, Australia; [3]University of Copenhagen, Copenhagen, Denmark

Purpose: This study aims to explore different sleep patterns in Indigenous Australian children and assess the role of sleep patterns in longitudinal changes in body mass index (BMI).

Methods: This work is based on wave 5 to wave 8 (2012–2015) data of the Australian Longitudinal Study of Indigenous Children (LSIC) cohort. Latent class analysis was used to determine distinct sleep patterns, taking into account weekday sleep duration, weekdays and weekends bedtimes, and weekday wake times. Multilevel models with a random intercept for child and geographic clusters were used to investigate the role of baseline sleep pattern in predicting longitudinal changes in BMI.

Results: Baseline data for 1,258 children (50.7% males), mean age 6.32 years ($SD \pm 1.52$), indicated the presence of five classes of sleep patterns: early/long sleepers (4.5%), normative sleepers (25.5%), late sleepers (49.9%), consistent late sleepers (11.1%), and early risers (9%). Family income, child health, food choices, sleep problems, geographic remoteness and area-level disadvantage, were found to be significantly associated with sleep patterns in children. Regression results indicate that late sleep pattern is significantly associated with longitudinal gains in BMI. Compared with early sleepers, consistent late sleepers were found to have a significant increase in BMI (β = 1.03, 95% CI: 0.001–2.05, p = 0.05).

Conclusions: This study underscores the importance of looking beyond sleep duration and highlighting the positive outcomes of early bedtimes in children. As sleep pattern is modifiable, this offers the opportunity for improvement in sleep and protecting against future weight gain in Indigenous children.

O025 | Are there gender differences in the effects of sleep disordered breathing in children?

C. Ong[1,2]; A. Weichard[1,2]; J. Thacker[1,2]; G. Nixon[1,2,3]; M. Davey[1,3]; R. Horne[1,2]

[1]Department of Paediatrics, Monash University, Melbourne, Australia; [2]The Ritchie Centre, Hudson Institute of Medical Research, Melbourne, Australia; [3]Melbourne Children's Sleep Centre, Melbourne, Australia

Background: In adults there is a distinct gender difference in the prevalence of sleep disordered breathing (SDB), however there have been limited studies examining the effects of gender in children with SDB. We compared the effects of gender on severity of SDB, blood pressure, sleep, respiratory characteristics, and behaviour in a large group of children referred for assessment of SDB and non-snoring control children recruited from the community.

Methods: We recruited 533 children aged 3–18 years between 2004 and 2016, who underwent overnight polysomnography, using standard paediatric techniques. Blood pressure was recorded whilst seated quietly prior to each study. Behaviour, executive function and quality of life were assessed with the CBCL, BRIEF and OSA-18 questionnaires. Children were grouped by gender and SDB severity based on their obstructive apnoea-hypopnoea index (OAHI) into non-snoring controls, Primary Snoring (PS) (OAHI ≤ 1 event/hr), Mild OSA (OAHI > 1-≤5 events/hr) and moderate/severe (MS) OSA (OAHI > 5 events/hr) and compared data with 2-way ANOVA.

Results: 298 boys and 235 girls were studied: controls (M = 61; F = 70), PS (M = 110; F = 71), Mild OSA (M = 72; F = 45) and MS OSA (M = 55; F = 49). Mean age was 7.2 ± 0.1 years (mean ± SEM) and BMI z-score (0.66 ± 0.07). There were no differences in age or BMI z-score between groups. There was also no difference in SDB severity, sleep characteristics, blood pressure, behaviour, executive function or quality of life.

Conclusions: In contrast to studies in adults, our study did not identify any gender differences in the severity or consequences of SDB in children.

O026 | Lifetime sleep trajectories predict variations in children's outcomes at 10–11 years: Australian longitudinal study

A. Williamson[1]; J. Mindell[2]; H. Hiscock[3]; J. Quach[4]

[1]Children's Hospital of Philadelphia, Philadelphia, USA; [2]Saint Joseph's University, Philadelphia, USA, [3]Murdoch Childrens Research Institute, Parkville, Australia; [4]The University of Melbourne, Carlton, Australia

Introduction: Although childhood sleep problems are associated with adverse outcomes, little is known about the impact of lifetime sleep problem trajectories on child functioning. We examined whether distinct sleep problem trajectories from infancy through middle childhood are associated with variation in child psycho-social, behavioural, and academic functioning at 10–11 years.

Methods: Data were from the first six biennial waves of the Growing Up in Australia Study - Birth Cohort (5,107 recruited at birth). Caregivers reported on child sleep problems at each time point. Child functional outcomes at ages 10–11 years included the caregiver- and teacher-reported Strengths and Difficulties Questionnaire, the caregiver-reported Pediatric Quality of Life Questionnaire, and the teacher-reported Academic Rating Scale (literacy/language and mathematics) and Approach to Learning. Sleep problem trajectories were used to predict outcomes using regression models, adjusting for a priori covariates of child sex, indigenous status, sleep behaviours, socio-economic position and special health care needs.

Results: Latent profile analysis identified five distinct sleep problem trajectories from ages 0–1 years to 10–11 years: persistent sleep problems through middle childhood (7.7% of the sample), limited infant/preschool sleep problems (9.0%), increased middle childhood sleep problems (17.0%), mild increases over time (14.4%), and no sleep problems (51.9%).