insomnia and a deconstruction of contributing factors to the presenting problem of insomnia.
Progress to date
Low-risk ethics approval submitted via St Vincent's Human Research Ethics Committee.
Literature review in progress.
Intended outcome and impact
The umbrella term "insomnia" belies its heterogeneity. Although there are common factors in most insomnia presentations, recognised in the simplification of diagnostic criteria in ICSD-3 and DSM 5, in managing individual patients it is also important to understand characteristics that are particular to the person. Whilst generic cognitive behavioural therapy for insomnia (CBTi) has been proven to be effective, in expert hands the response rate is still in the region of 60%, potentially reflecting a role for more tailored treatments for individuals to complement CBTi.

P039

INTERVENTIONS USED TO INCREASE SLEEP DURATION IN YOUNG PEOPLE: A SYSTEMATIC REVIEW

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Introduction: Habitual short sleep duration affects a substantial proportion of young people, which is problematic due to its association with various adverse consequences. The aim of this systematic review was to identify the effectiveness of current interventions to increase sleep duration in healthy young people (14–25 years).
Methods: A systematic literature search, following PRISMA guidelines was conducted across multiple databases including PubMed, Ovid MEDLINE, CENTRAL, Embase, CINAHL (via EBSCOhost), PsycINFO, Scopus, Web of Science, ProQuest Dissertations and Theses, and Trove. Eligible studies were required to report sleep duration before and after exposure to the intervention, published from 2005 onwards, and participants 14–25 years of age. The Newcastle-Ottawa scale and Cochrane Risk of Bias were used to evaluate quality of studies.
Results: 2695 citation were screened, and 29 studies met the eligibility criteria for this review. The included studies implemented differing methodologies, including behavioural (48.3%), educational (24.1%), and combination (24.1%) of behavioural, educational and other methods, such as mindfulness, light therapy, and naturalistic observation (3.4%). Initial findings indicate that educational interventions on their own are not effective at increasing sleep duration as behavioural or combination of both.
Discussion: These results indicate that behavioural interventions which prescribe new sleep schedules show positive treatment effects on sleep duration. Hence, provide promise for mitigating sleep difficulties and improving health in young people aged 14–25 years.

P040

NIGHT SHIFT WORK AND DISEASE: A SYSTEMATIC REVIEW OF THE ROLE OF OXIDATIVE STRESS

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Night shift workers make up an essential part of the modern workforce. However, night shift workers have higher incidences of late in life diseases and earlier mortality. Night shift workers are exposed to constant light and experience circadian rhythm disruption. Sleep disruption is thought to increase oxidative stress, defined as an imbalance of excess pro-oxidative factors and reactive oxygen species over anti-oxidative activity. Oxidative stress can damage cells, proteins and DNA and can eventually lead to varied chronic diseases such as cancer, diabetes, cardiovascular disease, Alzheimer's and dementia. This review aimed to understand whether night shift workers were at greater risk of oxidative stress and to contribute to a consensus on this relationship. Twelve studies published in 2001–2019 examining 2,081 workers were included in the review. Studies compared both the impact of working a single shift and in comparisons between those who regularly work night shifts and only day shifts. All studies had evidence to support this relationship across a range of oxidative stress indicators, including: increased DNA damage, reduced DNA repair capacity, increased lipid peroxidation, higher levels of reactive oxygen species, and to a lesser extent, a reduction in antioxidant defence. This research supports the theory that melatonin and the sleep wake cycle mediate the relationship between shift work and oxidative stress. It is concluded that night shift work increases the risk for oxidative stress and therefore future disease. Recommendations are made to promote the long-term health of shift workers considering these findings.

P041

THE IMPACT OF SIMULATED NIGHT SHIFTS ON EXECUTIVE FUNCTIONING

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Nightwork is associated with fatigue, decreased sleep quality, and impairments in cognitive function. While attentional tasks have been widely investigated, there are limited data on more complex tasks, such as executive functioning during nightwork. Workers often need to rapidly shift between tasks, adapting to new and complex situations. The aim of this study was to investigate the impact of nightwork on executive functioning.
Healthy, non-shift working individuals (N=8; 5F, 24.8±5.0y) participated in a 7-day live-in laboratory study. Participants underwent an 8h TIB baseline sleep, followed by 4 consecutive simulated nightshifts with 7h TIB sleep during the day and an 8h TIB recovery sleep. Participants were assessed for executive function at 2000h, 2200h, 0100h and 0400h. Executive functioning was assessed with a mental flexibility switching task where a 3D rotation and math task were displayed simultaneously with an arrow indicating which task to complete in a random order. Resulting throughput data were analysed using linear mixed models.
There was a main effect of time of night ($F(3,77)=4.81, p=.004$) on throughput such that there was a speed accuracy trade off over the night shift with slower switching ability later in the shift. There was also a main effect of nightshift ($F(2,77)=54.33, p<.001$) where participants' performance improved on the task with each nightshift.
This study suggests executive functioning is impaired on nightshift with worse performance at 0400h. Task improvements over consecutive nightshifts may have been due to learning or acclimation to nightwork. Understanding complex task performance on nightshift is important for tailoring countermeasures.