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Scientific Highlights/Abstracts of Original Investigations

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EDITORIAL

This abstract supplement unites the journal *SLEEP* and the science of the SLEEP 2007 21st Annual Meeting of the Associated Professional Sleep Societies, LLC in a convenient format. This special issue includes all abstracts presented at SLEEP 2007, on June 9-14 in Minneapolis, Minnesota. The supplement provides all AASM and SRS members, including those unable to attend the meeting, a glimpse into the new ideas and latest research taking place in the field of sleep disorders medicine and sleep research.

Of the 1,124 abstracts accepted, 250 will be presented in oral presentation format and the remainder as poster presentations. Similar to prior meetings, the Program Committee elected to:

1) Group posters into thematic groups.
2) Display each poster on one of the three schedule poster days (June 11, 12, 13).

New this year, the poster sessions have been expanded to a full two hours, allowing attendees greater opportunity to view posters and interact with presenters. Each poster has a unique 4 digit number and is assigned to one of the 19 categories listed below to facilitate identification and location.

Category A – Neuroscience
Category B – Physiology/Phylogeny/Ontogeny
Category C – Pharmacology
Category D – Circadian Rhythms
Category E – Pediatrics
Category F – Aging
Category G – Sleep Deprivation
Category H – Sleep Disorders – Breathing
Category I – Sleep Disorders – Narcolepsy/Hypersomnia
Category J – Sleep Disorders – Insomnia
Category K – Sleep Disorders – Parasomnias
Category L – Sleep Disorders – Movement Disorders
Category M – Sleep Disorders – Neurologic Disorders
Category N – Sleep in Medical Disorders
Category O – Sleep in Psychiatric Disorders
Category P – Instrumentation & Methodology
Category Q – Healthcare Services, Research & Education
Category R – Molecular Biology & Genetics
Category S – Behavior, Cognition & Dreams

Attendees of the SLEEP 2007 meeting will experience a forum for the discussion of new ideas and key research in the field of sleep medicine and research. Our hope is that this experience fosters an environment in which members and attendees obtain education on the latest basic science, clinical science and technologies in the sleep field, further promoting the continued growth of the field through the dissemination of new knowledge. We look forward to sharing in the success of this pivotal event.

David F. Dinges, Ph.D.
Editor-in-Chief

0670

IS CHRONIC INSOMNIA A RISK FACTOR FOR HIPPOCAMPAL VOLUME LOSS?

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Introduction: Sleep is important for brain function and development with respect to gene expression, protein translation and learning and memory. It has been shown that sleep restriction or sleep deprivation has a detrimental impact on neuro-neogenesis in the rat hippocampus. These data raise the possibility that chronically disturbed sleep in humans, as in primary insomnia (PI) may affect the morphology of hippocampal structures, known to play a role in learning and memory processes. To test this hypothesis, patients with chronic primary insomnia were investigated with magnetic resonance imaging (MRI) and their data were compared to good sleepers.
Methods: MRI images (1.5 Tesla) of the brain were obtained from insomniac patients and good sleepers. MRI scans were analyzed bilaterally by manual morphometry for different brain areas including hippocampus, amygdala, anterior cingulate, orbitofrontal and dorsolateral prefrontal cortex. Subjects were 8 unmedicated physician-referred patients (three males, five females; 48.4 +/- 16.3 yrs.) with chronic primary insomnia (according to DSM-IV criteria) and 8 good sleepers matched for age, sex, body mass index and education.
Results: Patients with primary insomnia demonstrated significantly reduced hippocampal volumes bilaterally. Hippocampal volumes correlated significantly negative with the Pittsburgh sleep quality index.
Conclusion: Similar findings have been described in other neuropsychiatric conditions, for example depression or borderline personaility disorder. We speculate that insomnia may be the common underlying pathway leading to hippocampal volume reductions. The results may also explain why conditions like primary insomnia or those associated with insomnia are frequently coupled with neuropsychological impairments.

0671

ETHNIC DIFFERENCES IN SLEEP BETWEEN MIDDLE-AGED AFRICAN-AMERICAN AND CAUCASIAN-AMERICAN INSOMNIACS

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Introduction: Previous research has revealed significant differences in the prevalence distribution of insomnia across age groups between African-Americans (AA) and Caucasian-Americans (CA). In particular, the prevalence of insomnia in AA peaks amid ages 30 to 59 while the prevalence of insomnia in CA gradually increases with age. The goal of this paper is to compare middle-aged AA and CA quantitatively classified as insomniacs on demographic, health behavior, subjective sleep, and daytime functioning variables.
Methods: We identified 25 AA and 28 CA, aged 30-59, out of 772 participants in an epidemiological survey. All participants completed the following questionnaires: two weeks of sleep diaries, a general health questionnaire, and daytime functioning questionnaires including sleepiness, fatigue, insomnia impact, depression, and anxiety.
Results: t-tests between AA and CA insomniacs were conducted. Results on the sleep variables indicate that AA report longer SOL (p=.001), more naptime (p<.01), and less sleep efficiency (p=.01) compared to CA. AA with insomnia also reported significantly less educational attainment than CA with insomnia (p=.001). There were no differences between the groups in daytime functioning or any other health-related problem.
Conclusion: Middle-aged AA with insomnia are reporting a more severe presentation of insomnia than CA with insomnia. There are no differences in reported health or daytime functioning that can account for these differences.
Support (optional): Research supported by National Institute on Aging grants AG12136 and AG14738

0672

IMPULSIVITY AS A RISK FACTOR FOR INSOMNIA: EVIDENCE FROM AN EXPLORATORY STUDY

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Introduction: Despite its prominent status in psychopathology, impulsivity has rarely been considered as a potential risk factor for insomnia in previous research, and the few studies that have done so produced equivocal evidence. Meanwhile, indirect evidence continues to hint at a possible link between impulsivity and insomnia, for example, well-documented sleep disturbances in impulsivity-related disorders such as borderline personality disorder. The purpose of the present study was to investigate the relationship between impulsivity and insomnia based on the comprehensive approach to impulsivity proposed by Whiteside and Lynam (2001). According to these authors, four facets of impulsivity can be distinguished: urgency, lack of premeditation, lack of perseverance, and sensation seeking.
Methods: A sample of undergraduate students (N=233) completed three questionnaires: the UPPS Impulsive Behavior Scale, the Sleep Impairment Index (Morin, 1993), and a short questionnaire on hypnagogic and dreamlike mentation.
Results: The main findings were as follows: (a) urgency was related to insomnia (r=.33, p<.01); (b) lack of perseverance was related to insomnia (r=.24, p<.01); (c) urgency was related to frequency of upsetting thoughts at sleep onset (r=.32, p<.01), upsetting images at sleep onset (r=.37, p<.01), upsetting dreams (r=.28, p<.01), and nightmares (r=.21, p<.01); (d) the effect of urgency on difficulty in falling asleep was partially mediated by frequency of upsetting thoughts and images at sleep onset (Sobel test: Z=4.04, p<.001).
Conclusion: To our knowledge, the present study is the first to provide clear evidence for a link between two facets of impulsivity (urgency, lack of perseverance) and insomnia, and for a link between urgency and sleep-interfering cognitive activity. The specific relations between facets of impulsivity and aspects of insomnia might open up new avenues for modeling the development and maintenance of insomnia and for clinical interventions.

0673

DO SLEEP PROBLEMS AFFECT WHAT WE EAT?

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Introduction: Individuals who consume fast food two or more times a week may gain approximately 10 more pounds and have twice as much insulin resistance in a 15-year period than those who consume fast food less than once per week (Pereira, 2004). Sleep loss has also been associated with insulin resistance (VanHelder, *et al.*, 1993). This study assessed eating patterns in persons who described themselves as having