

# Journal Scan

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*Indian J Sleep Med 2014; 9.2, 74-86*

1. *Indian J Pediatr. 2013 Jun;80(6):492-8.*

## **Sleep problems in children: A guide for primary care physicians.**

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Sleep problems are commonly encountered in children with a prevalence of 20-42 %. Sleep problem usually entails a sleep pattern that is unsatisfactory or cause of concern to the parent, child or physician. Children present to primary care physicians or pediatricians with mainly three types of sleep related problems—first group has disorders of initiating and maintaining sleep (dyssomnias); second category (hypersomnias) is characterized by excessive sleepiness and third section represents abnormal activity or behavior during sleep, also classified as parasomnias. Evaluation of a child with sleep problem involves a comprehensive sleep history followed by detailed medical, developmental and behavioral history. One simple sleep screening tool used for evaluation of sleep in children-BEARS (B is bed time problems, E is excessive day time sleepiness, A is awakenings during the night, R is regularity as well as duration of sleep, and S is snoring) has been discussed. This article discusses common sleep problems observed in different age groups starting right from neonatal to the adolescent period followed by management strategies to optimize outcome of sleep in children.

2. *Isr Med Assoc J. 2013 Dec;15(12):739-44.*

## **The impact of sleep deprivation on sleepiness, risk factors and professional performance in medical residents.**

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**BACKGROUND:** Prolonged working hours and sleep deprivation can exert negative effects on professional performance and health.

**OBJECTIVES:** To assess the relationship between sleep deprivation, key metabolic markers, and professional performance in medical residents.

**METHODS:** We compared 35 residents working the in-house night shift with 35 senior year medical students in a cross-sectional cohort study. The Epworth Sleepiness Scale (ESS) questionnaire was administered and blood tests for complete blood count (CBC), blood chemistry panel, lipid profile and C-reactive protein (CRP) were obtained from all participants.

**RESULTS:** Medical students and medical residents were comparable demographically except for age, weekly working hours, reported weight gain, and physical activity. The ESS questionnaires indicated a significantly higher and abnormal mean score and higher risk of falling

asleep during five of eight daily activities among medical residents as compared with medical students. Medical residents had lower high density lipoprotein levels, a trend towards higher triglyceride levels and higher monocyte count than did medical students. CRP levels and other laboratory tests were normal and similar in both groups. Among the residents, 5 (15%) were involved in a car accident during residency, and 63% and 49% reported low professional performance and judgment levels after the night shift, respectively.

**CONCLUSIONS:** Medical residency service was associated with increased sleepiness, deleterious lifestyle changes, poorer lipid profile, mild CBC changes, and reduced professional performance and judgment after working the night shift. However, no significant changes were observed in CRP or in blood chemistry panel. Larger prospective cohort studies are warranted to evaluate the dynamics in sleepiness and metabolic factors overtime.

3. *BMC Public Health*. 2013 Dec 20;13:1204.

### **Association between shift work and obesity among female nurses: Korean Nurses' Survey.**

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**BACKGROUND:** Shift work has been hypothesized as a risk factor for obesity. In this study, we investigated the association between current shift work and body mass index (BMI) among female nurses in Korea. The relationship between duration of shift work and BMI of the participants was also evaluated.

**METHODS:** This cross-sectional survey evaluated participants in the Korean Nurses' Survey, conducted from October to December 2011, using web-based self-administered questionnaires. A total of 9,989 nurses were included among 10,000 who registered on the survey web site (5,287 shift workers and 4,702 non-shift workers). Current shift workers were divided into tertiles of shift work duration (0.08-3.00 years, n = 1,732; 3.08-6.75 years, n = 1,731; and 6.83-38.00 years, n = 1,686). The BMI thresholds of overweight and obesity were  $\leq 23$

kg/m<sup>2</sup> and  $\geq 25$  kg/m<sup>2</sup>, respectively. Data were analyzed using SPSS software.

**RESULTS:** Mean participant age was  $33.2 \pm 8.6$  years and the mean BMI was  $20.9 \pm 2.5$  kg/m<sup>2</sup>. There were statistically significant differences in current smoking status, regular drinking habit, dietary habits, regular exercise, sleep problems and self-perceived health status according to duration of shift work. The overall prevalence of overweight/obesity (18.6%) and obesity (7.4%) increased significantly as shift work duration increased from the lowest to highest tertile (P for trend  $< 0.001$ ). Multivariate logistic regression analysis revealed no association between current shift work and BMI. However, after adjusting for potential confounders, the participants with the longest duration of shift work were 1.63 (95% CI, 1.22-2.17) times more likely to be overweight or obese than those with the shortest duration. There was a significant positive association between obesity and shift work duration in the unadjusted analysis; however, it was attenuated and no longer significant in the multivariate model.

**CONCLUSIONS:** The duration of shift work was positively associated with prevalence of overweight/obesity in nurses in Korea. Although these findings need to be confirmed in prospective studies, they suggest that special attention should be paid to female nurses with a long duration of shift work.

4. *BMC Fam Pract*. 2013 Dec 13;14:191.

### **General practitioners' experiences and perceptions of benzodiazepine prescribing: Systematic review and meta-synthesis.**

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**BACKGROUND:** Benzodiazepines are often prescribed long-term inappropriately. We aimed to systematically review and meta-synthesise qualitative studies exploring clinicians' experiences and perceptions of benzodiazepine prescribing to build an explanatory model of processes underlying current prescribing practices.

**METHODS:** We searched seven electronic databases for qualitative studies in Western primary care settings published in a European language between January 1990 and August 2011 analysing GP or practice nurse experiences of benzodiazepine prescribing. We assessed study quality using the Critical Appraisal Skills Programme Checklist. We analysed findings using thematic synthesis.

**RESULTS:** We included eight studies from seven countries published between 1993 and 2010. Benzodiazepine prescribing decisions are complex, uncomfortable, and demanding, taken within the constraints of daily general practice. Different GPs varied in the extent to which they were willing to prescribe benzodiazepines, and individual GPs' approaches also varied. GPs were ambivalent in their attitude towards prescribing benzodiazepines and inconsistently applied management strategies for their use. This was due to the changing context of prescribing, differing perceptions of the role and responsibility of the GP, variation in GPs' attitudes to benzodiazepines, perceived lack of alternative treatment options, GPs' perception of patient expectations and the doctor-patient relationship. GPs faced different challenges in managing initiation, continuation and withdrawal of benzodiazepines.

**CONCLUSION:** We have developed a model which could be used to inform future interventions to improve adherence to benzodiazepine prescribing guidance and improve prescribing through education and training of professionals on benzodiazepine use and withdrawal, greater provision of alternatives to drugs, reflective practice, and better communication with patients.

5. *J Coll Physicians Surg Pak.* 2013 Dec;23(12):874-7.

### **Delayed sleep phase syndrome: A forerunner of psychiatric distress.**

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**OBJECTIVE:** To determine the association of extrinsic delayed sleep phase syndrome (DSPS) and psychiatric distress.

**STUDY DESIGN:** Cross-sectional, analytical study.

**PLACE AND DURATION OF STUDY:** Dow University of Health Sciences, Karachi, from July 2009 to September 2010.

**METHODOLOGY:** Sales personnel employed in different shopping malls in Karachi operating from 2 pm afternoon to 12.00 mid-night were inducted. The instrument used to define DSPS included difficulty in falling sleep timely at night and early rising in the morning. The proven DSPS subjects were studied by the Aga Khan University Anxiety Depression Scale (AKUADS) to explore the association of extrinsic (motivational) DSPS with anxiety and depression syndrome along with a survey questionnaire having twelve questions based on the criteria of ICSD (International Classification of Sleep Disorder) on DSPS, to study different characteristics of these subjects and its relationship with psychiatric illness.

**RESULTS:** Eight hundred and eleven subjects were inducted, majority were male (n =757, 93.3%). Three hundred and forty-five (42.5%) subjects scored > 19 with mean value of 41.4 ± 15.90. Result supported an association between DSPS and psychiatric distress.

**CONCLUSION:** Extrinsic DSPS prevention necessitates attention because of its positive relationship with psychiatric distress.

6. *PLoS One.* 2013 Nov 20;8(11):e79529.

### **Selected neurophysiological, psychological, and behavioral influences on subjective sleep quality in nurses: a structure equation model.**

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Few studies have examined relationships among neurophysiological, psychological, and behavioral factors with regard to their effects on sleep quality. We used a structure equation model to investigate behavioral and psychological factors that influence neurophysiological regulation of sleep in shift workers. Using a cross-sectional study design, we tested the model with a sample of 338 female nurses working rotating shifts at an urban regional hospital. The Morningness-Eveningness Questionnaire (MEQ) and short-form Menstrual Distress Questionnaire (MDQ) were used to measure

neurophysiological factors involved in morningness-eveningness and menstrual distress. The Sleep Hygiene Awareness and Practice Scale (SHAPS) and Profile of Mood States Short Form (POMS-SF) were completed to measure behavioral factors of sleep hygiene practices and psychological factors of mood states. In addition, the Pittsburgh Sleep Quality Index (PSQI) measured participant's self-reported sleep quality. The results revealed that sleep hygiene practices and mood states mediated the effects of morningness-eveningness and menstrual distress on sleep quality. Our findings provide support for developing interventions to enhance sleep hygiene and maintain positive mood states to reduce the influence of neurophysiological factors on sleep quality among shift workers.

7. *Med Pr.* 2013;64(3):397-418.

### **Night work and health of nurses and midwives- A review.**

[Article in Polish]

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Night shift work has been thought to play a role in the etiology of chronic diseases through a disruption of the circadian rhythm, decreased synthesis of melatonin and sleep deprivation. Our aim was to review the epidemiological studies on the association between night shift work and some pathologies in nurses and midwives. We reviewed publications available in the MEDLINE database and published before June 2012, describing the cross-sectional (almost two thirds of all papers) and cohort studies. In total, we identified 26 original papers, including 5 epidemiological studies addressing diseases or disorders of the digestive system, 3—metabolic syndrome, 2—type 2 diabetes, 9—cardiovascular diseases and (CVD risk factors, 5—obesity/overweight, 2—menstrual disorders and 3—poor pregnancy outcomes. The analysis of the literature indicates that night shift work of nurses and midwives is most strongly associated with a higher risk of obesity/overweight. In each of the five studies, which we identified this association was observed (confirmed by the statistical significance of the results), also after adjustment for confounders. The results

for type 2 diabetes and disorders of the menstrual cycle are also suggestive. Epidemiological data on the other disorders or pathologies discussed in this article seem to be less certain - their results are inconsistent or their number is too small to draw definite conclusions. Further epidemiological studies of nurses and midwives working on night shifts and prospective observations in particular are recommended to find out whether potential association between the night work and discussed health issues is causal.

8. *Aviat Space Environ Med.* 2013 Oct;84(10):1105-8.

### **Fatigue assessment: subjective peer-to-peer fatigue scoring.**

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**INTRODUCTION:** Fatigue is a complex entity with contributing factors that may include insufficient sleep, circadian dysrhythmia, high workload, extended duty periods, clinical sleep pathology, psychosocial aspects, environmental factors, and many others. It can contribute to significant performance deficits and crucial safety lapses. Despite maximal implementation of accepted techniques and best practices for mitigation strategies, the deployed military rotary-wing (RW) environment must still contend with substantial fatigue-related issues among aircrew.

**METHODS:** We introduce a novel subjective peer-to-peer fatigue rating system recently demonstrated in a deployed military RW environment. Each pilot provides an anonymous weekly fatigue rating for every other pilot in the unit exclusive of self. Median and variance of the peer ratings for each pilot are recorded by the safety officer and tracked over time.

**RESULTS:** The program allows for a multidimensional external perspective on a pilot's fatigue state, relative function, and degree of coping. Scoring is predicated upon the recognition of a significant deviation from a peer's baseline that may include social and interpersonal interactions or the observation of deficits in duty performance.

**DISCUSSION:** The research basis for scientific validity and reliability regarding current peer fatigue scoring systems is exiguous. This novel approach may be of merit, particularly among military aircrew in a deployed-type setting with sustained high workload, operational stress, and limited time for supernumerary tasks. An anonymous subjective peer-to-peer fatigue scoring system is worthy of further scientific investigation, particularly warranting studies of reliability and validity.

9. *Br J Nurs.* 2013 Jul 25-Aug 7;22(14):827-30.

### **Safe and sound? Night-time checking in care homes.**

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Current research into sleep in care homes indicates that care-giving processes at night disturb vital sleep—a key element in the everyday wellbeing of older people. This article considers the use of technology to support the provision of relationship-centred care at night. Within the context of a large study on sleep in later life, research was carried out to gain an understanding of care staff's acceptance of technology. The findings indicate a hesitancy to rely on technology. To fulfil a professional duty of care at night, the personal assessment of a resident's wellbeing is perceived as best when performed by care-home staff. However, in night-time care, a relationship-centred approach supported by technology has the potential to improve the sleep of older people living in care homes, which in turn could improve their active participation in everyday life.

10. *PLoS One.* 2013 Nov 18;8(11):e79688.

### **Morning sleep inertia in alertness and performance: effect of cognitive domain and white light conditions.**

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The transition from sleep to wakefulness entails a temporary period of reduced alertness and impaired performance known as sleep inertia. The extent to which its severity varies with task and cognitive processes remains unclear. We examined sleep inertia in alertness, attention, working memory and cognitive throughput with the Karolinska Sleepiness Scale (KSS), the Psychomotor Vigilance Task (PVT), n-back and add tasks, respectively. The tasks were administered 2 hours before bedtime and at regular intervals for four hours, starting immediately after awakening in the morning, in eleven participants, in a four-way cross-over laboratory design. We also investigated whether exposure to Blue-Enhanced or Bright Blue-Enhanced white light would reduce sleep inertia. Alertness and all cognitive processes were impaired immediately upon awakening ( $p < 0.01$ ). However, alertness and sustained attention were more affected than cognitive throughput and working memory. Moreover, speed was more affected than accuracy of responses. The light conditions had no differential effect on performance except in the 3-back task ( $p < 0.01$ ), where response times (RT) at the end of four hours in the two Blue-Enhanced white light conditions were faster (200 ms) than at wake time. We conclude that the effect of sleep inertia varies with cognitive domain and that its spectral/intensity response to light is different from that of sleepiness. That is, just increasing blue-wavelength in light may not be sufficient to reduce sleep inertia. These findings have implications for critical professions like medicine, law-enforcement etc., in which, personnel routinely wake up from night-time sleep to respond to emergency situations.

11. *Ann Saudi Med.* 2013 Sep-Oct;33(5):451-6

### **Physician well-being: prevalence of burnout and associated risk factors in a tertiary hospital, Riyadh, Saudi Arabia.**

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**BACKGROUND AND OBJECTIVES:** This study is to determine level and factors associated with burnout among physicians in a tertiary hospital in Saudi Arabia.

**DESIGN AND SETTINGS:** This is a cross-sectional study, conducted at the King Fahad National Guard Hospital at in King Abdulaziz Medical City between October 2010 and November 2010.

**METHODS:** The Maslach Burnout Inventory questionnaire was used to measure burnout. Socio-demographic-, specialty-, and work-related characteristics were added to explore factors associated with burnout.

**RESULTS:** The study included 348 participants; 252 (72%) were males, 189 (54%) were consultants, and 159 (46%) were residents. The mean (SD) age was 35 (9.8) years. The burnout prevalence was 243/348 (70%); 136 (56%) of the 243 were residents and 107 (44%) were consultants. Age, female gender, marital status, number of years in practice, sleep deprivation, presence of back pain, and a negative effect of practice on family life were associated with burnout in the univariate logistic regression analysis. The factors independently associated with burnout in the final multivariate model were as follows: suffering from back pain (odds ratio [OR]=2.1, 95%CI 1.2-3.8, P=.01), sleep deprivation (OR=2.2, 95%CI 1.2-3.8, P=.009), being a resident physician/surgeon (OR=4.9, 95%CI 1.7-14.2, P=.004), and negative effect of practice on family life (OR=2.1, 95%CI 1.1-3.9, P=.02).

**CONCLUSION:** In this study, the prevalence of burnout was found to be higher than estimates documented in most other studies. Reported risk factors should be addressed to decrease the prevalence and consequences of burnout.

*12. Int J Emerg Ment Health. 2013;15(1):39-49.*

### **An exploration and analysis on the timeliness of critical incident stress management interventions in healthcare.**

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There is debate in the literature regarding the definition

and effectiveness of “early” critical incident stress management (CISM) interventions. Definitions range from interventions that take place within twelve hours (Everly and Mitchell, 1999; Stallard, Velleman, Salter & Howse, 2005) and up to a three month window (Bisson & Cohen, 2006). Others define early support as an intervention directly after an incident, before the individual leaves work and definitely before having their first sleep (Talbot, 1990; Snelgrove, 2000). Most CISM research is carried out in industries that do not have the same characteristics as healthcare namely, 24/7 operation and a strong female demographic. Therefore, given the lack of research evidence around the timeliness of CISM interventions in healthcare, this study examined the effect of early (< 24 hours post-incident) vs. late (> 24 hours post-incident) CISM interventions on stress reaction and employees perceptions of service. Although the subject population in each group was too small to show statistical significance, the quantitative data showed an overall trend that the early intervention group had lower mean scores for avoidance, intrusion and hyperarousal at all three time periods. Thematic analysis demonstrated both groups found the CISM intervention was beneficial and the timing appropriate.

*13. J Stud Alcohol Drugs. 2013 Nov;74(6):841-51.*

### **Mental health, sleep quality, drinking motives, and alcohol-related consequences: A path-analytic model.**

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**OBJECTIVE:** Poor mental health, sleep problems, drinking motivations, and high-risk drinking are prevalent among college students. However, research designed to explicate the interrelationships among these health risk behaviors is lacking. This study was designed to assess the direct and indirect influences of poor mental health (a latent factor consisting of depression, anxiety, and stress) to alcohol use and alcohol-related consequences through the mediators of global sleep quality and drinking motives in a comprehensive model.

**METHOD:** Participants were 1,044 heavy-drinking college students (66.3% female) who completed online surveys.

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**RESULTS:** A hybrid structural equation model tested hypotheses involving relations leading from poor mental health to drinking motives and poorer global sleep quality to drinking outcomes. Results showed that poor mental health significantly predicted all four subscales of drinking motivations (social, coping, conformity, and enhancement) as well as poor sleep. Most of the drinking motives and poor sleep were found to explain alcohol use and negative alcohol consequences. Poor sleep predicted alcohol consequences, even after controlling for all other variables in the model. The hypothesized mediational pathways were examined with tests of indirect effects.

**CONCLUSIONS:** This is the first study to assess concomitantly the relationships among three vital health-related domains (mental health, sleep behavior, and alcohol risk) in college students. Findings offer important implications for college personnel and interventionists interested in reducing alcohol risk by focusing on alleviating mental health problems and poor sleep quality.

14. *Medsurg Nurs.* 2013 Jul-Aug;22(4):221-7.

## **Reported sleep health and viral respiratory illness in nurses.**

**Smart D(1), Wilson M.**

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**PURPOSE:** In this study, differences and relationships among variables in sleep quality/quantity and self-reported viral illness between day and non-day shift hospital nurses were examined.

**DESIGN AND METHODS:** A descriptive, cross-sectional study used the 10-item Karolinska Sleep Questionnaire to measure quality of sleep in 131 direct-care nurses from a 246-bed community-owned hospital in the northwestern United States.

**FINDINGS:** Non-day shift nurses used more techniques to stay awake while at work or aid in sleep at home. No differences were found between shifts in reported absenteeism for viral illness (m=2.9 days), or hours of reported sleep (m=7.5); significant differences were found in non-day shift quality of sleep compared to day shift nurses and between age groups.

**CONCLUSION:** Sleep disturbances are present among nurses and differ depending on shift worked and nurse's age. No association was found between sleep and reported viral illness.

15. *US Army Med Dep J.* 2013 Oct-Dec;109-18.

## **The challenge of sleep management in military operations.**

**Wesensten NJ(1), Balkin TJ.**

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It has long been known that short-term (days) insufficient sleep causes decrements in mental effectiveness that put individuals at increased risk of committing errors and causing accidents. More recently, it has been discovered that chronic poor sleep (over years) is associated with a variety of negative health outcomes (metabolic syndrome, obesity, degraded behavioral health). Implementing an effective sleep health program is, therefore, in the best interests of active duty personnel and their families both in the short- and long-term. Like managing physical activity or nutrition, effectively managing sleep health comes with its unique set of challenges arising from the fact that individuals who routinely do not obtain sufficient sleep are generally desensitized to feeling sleepy and are poor at judging their own performance capabilities—and individuals cannot be compelled to sleep. For these reasons, an optimally effective sleep health program requires 3 components: (1) a rigorous, evidence-based sleep education component to impart actionable knowledge about optimal sleep amounts, healthy sleep behaviors, the known benefits of sleep, the short- and long-term consequences of insufficient sleep, and to dispel myths about sleep; (2) a nonintrusive device that objectively and accurately measures sleep to empower the individual to track his/her own sleep/wake habits; and (3) a meaningful, actionable metric reflecting sleep/wake impact on daily effectiveness so that the individual sees the consequences of his/her sleep behavior and, therefore, can make informed sleep health choices.

16. *Int J Prev Med.* 2013 Sep;4(9):1095-100.

### **Sleep quality of professional firefighters.**

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**BACKGROUND:** Firefighting is a unique job with contradictory demands that expose firefighters to many well documented causal factors of sleep debt, but no studies in Iran and only a few worldwide studies have investigated their sleep quality while sleep problems may lead to catastrophes especially in critical service workers. The aim of this study is to evaluate sleep quality and its related factors among a sample of professional Iranian firefighters.

**METHODS:** Using simple random sampling method in a cross-sectional study, 427 personnel of fire and rescue service were invited. They completed the Persian version of Pittsburgh Sleep Quality Index (PSQI) and a data collection sheet about their demographic and occupational features during an individual face to face interview in central office and firehouses throughout Tehran. Response rate was 88.7%.

**RESULTS:** The mean  $\pm$  SD global PSQI score was  $7.97 \pm 3.77$ . Sleep latency was the component of PSQI with the greatest degree of abnormality. 69.9% of participants were poor sleepers. Interestingly, we found no significant differences between sleep quality of shift workers and non shift workers. Using multiple logistic regression analysis, only having another job, smoking and years of job experience were predictors of poor sleep.

**CONCLUSIONS:** In comparison with adult population of Tehran, sleep quality deterioration is notably more common in Tehran firefighters which require health promotion interventions to prevent its serious adverse outcomes.

17. *Fam Med.* 2013 Sep;45(8):541-9.

### **Resident wellness behaviors: relationship to stress, depression, and burnout.**

**Lebensohn P(1), Dodds S, Benn R, Brooks AJ, Birch M, Cook P, Schneider C, Sroka S, Waxman D, Maizes V.**

University of Arizona.

**BACKGROUND AND OBJECTIVES:** Stress in medical education has been well documented, often with the primary focus on negative factors such as depression and burnout. Few studies have attempted to assess well-being mediating behaviors. This study describes the relationship between wellness behaviors and measures of well-being at the start of family medicine residency.

**METHODS:** Using an online questionnaire, first-year family medicine residents (n=168) completed standardized measures exploring perceived stress, depression, satisfaction with life, and burnout. A lifestyle wellness behavior measure was developed for the study.

**RESULTS:** Average reported perceived stress levels were consistent with ranges found for medical students and residents. Twenty-three percent of residents scored in a range consistent with depression risk. In terms of burnout risk, 13.7% scored in the high emotional exhaustion range and 23.8% in the high depersonalization range. Two thirds reported high life satisfaction. Higher depersonalization and less time in nurturing relationships were associated with greater likelihood of medication use for sleep, mood, and anxiety in females. Higher alcohol use was associated with increased levels of perceived stress, burnout, and depression. The two wellness behaviors most associated with higher well-being were restful sleep and exercise.

**CONCLUSIONS:** At the start of residency, well-being measures are consistent with findings in medical school. Restful sleep and exercise were associated with more positive well-being. Future longitudinal data analysis will help clarify the effect of residency training in well-being and lifestyle behaviors. Identification of protective factors and coping mechanisms could guide residencies in incorporating support services for residents.

18. *J Clin Sleep Med.* 2013 Oct 15;9(10):1093-6.

**Master's-level practitioners as cognitive behavioral therapy for insomnia providers: an underutilized resource.**

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Despite the efficacy of cognitive behavioral therapy for insomnia (CBT-I) in treating chronic insomnia, it remains underutilized. Lack of appropriately-trained CBT-I providers is a major reason. Master's-level practitioners (MLPs) may, in addition to doctoral-level psychologists, be uniquely positioned to fill this role, based not only on "goodness of professional fit" but also given a handful of studies showing these individuals' care outcomes meet or exceed standard outcomes. However, the ability of MLPs to provide CBT-I will be significantly restricted until a clear pathway is established that extends from training opportunities to credentialing. Further questions remain about how to attract and incorporate MLPs into established practices.

19. *Clin Nurse Spec.* 2013 Nov-Dec;27(6):298-306.

**Dementia caregivers' lived experience of sleep.**

**Simpson C(1), Carter P.**

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**PURPOSE:** Poor sleep quality leads to sleep deficiency, an unmet public health problem that is especially acute in caregivers. The purpose of this study was to investigate the dementia caregiver's lived experience of sleep. The specific objectives were to (1) explore causes for poor sleep as identified by the caregiver, (2) gain knowledge about how the caregiver manages the sleep experience, and (3) gain an understanding of how caregivers perceive health promotion suggestions to improve sleep quality.

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**METHODS:** This was a qualitative study using a phenomenological framework. In 3 focus groups, data were collected from 15 informal/family member caregivers of a person with dementia (PWD).

**RESULTS:** Three themes were identified in caregivers' descriptions of disruptions to their sleep quality: sleep quality fluctuating with the status of the PWD, a need for vigilance to safeguard the PWD at night, and worry about current and future events, which caused rumination. Caregivers did not receive formal help from healthcare providers but did participate in activities that promote good sleep. Caregivers identified barriers to health promotion activities, including lack of time, decreased energy, and additional costs for providing care for the PWD.

**CONCLUSION:** This research provides exemplars of caregivers' thoughts, preferences, values, and beliefs regarding their sleep experience in the context of caregiving. The caregiver's perspective should be taken into consideration when clinical nurse specialists provide evidence-based care. Clinical implications are provided.

20. *J Occup Health Psychol.* 2013 Oct;18(4):481-91.

**Do nurses who work in a fair organization sleep and perform better and why? Testing potential psychosocial mediators of organizational justice.**

**Hietapakka L(1), Elovainio M, Heponiemi T, Pesseau J, Eccles M, Aalto AM, Pekkarinen L, Kuokkanen L, Sinervo T.**

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We examined whether organizational justice is associated with sleep quality and performance in a population-based sample of 1,729 Finnish registered nurses working full time. In addition, we tested psychological mechanisms mediating the potential association. The results of multivariate linear regression analyses showed higher organizational justice to be associated with fewer sleeping problems ( $\beta$  values range from -.20 to -.11) and higher self-reported performance ( $\beta$  values range from .05 to .35). Furthermore, psychological distress (related to the psychological stress model) and job involvement (related

to the psychosocial resource model) mediated the association between organizational justice and sleep. Sleeping problems partly mediated the association between organizational justice and performance. Psychological distress explained 51% to 83% and job involvement explained 10% to 15% of the total effects of justice variables on sleeping problems. The findings provide support for the psychological stress model and offer practical implications for reducing nurses' sleeping problems.

21. *J R Coll Physicians Edinb.* 2013;43(3):230-5. doi: 10.4997/JRCPE.2013.309.

### **Working the night shift: a necessary time for training or a risk to health and safety?**

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The European Working Time Directive (EWTD) limits excessive night shifts and restricts the working week to no more than 48 hours. The underlying rationale is to minimise the health risks to all workers. Here we debate the impact of night rotas for doctors-in-training on patient safety and medical education; when the EWTD was agreed these topics may not have been considered, either systematically or objectively. The impacts of diurnal rhythms on human functions affect all night workers, but the nature of rostered medical and surgical work has little precedent in other industries or even in the contracts of other healthcare staff. For example, rostered night duties need to be distinguished from permanent night shift work. On-call medical night work from training doctors is generally required for short periods and usually involves fewer patients. It is an important time in training, where clinical responsibility and decision-making can be matured in a supervised setting. To comply with the EWTD most hospitals have adopted rota patterns that aim to cover the clinical needs, while ensuring no doctor works for more than 48 hours in an average working week. To monitor this process longterm studies are necessary to evaluate effects on a doctor's health and on patient care generally. The EWTD has also led to a loss

of continuity of patient care; does this really matter?

22. *JAMA Pediatr.* 2013 Nov;167(11):1032-7.

### **Trends and factors associated with infant bed sharing, 1993-2010: the National Infant Sleep Position Study.**

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**IMPORTANCE:** A strong association between infant bed sharing and sudden infant death syndrome or unintentional sleep-related death in infants has been established. Occurrences of unintentional sleep-related deaths among infants appear to be increasing.

**OBJECTIVES:** To determine the trends and factors associated with infant bed sharing from 1993 through 2010, including the association of physician advice on bed sharing.

**DESIGN:** National Infant Sleep Position study conducted with annual telephone surveys.

**SETTING:** The 48 contiguous states.

**PARTICIPANTS:** Nighttime caregivers of infants born within 7 months of each survey administration. Approximately 1000 interviews were completed annually.

**MAIN OUTCOMES AND MEASURES:** Infant bed sharing as a usual practice.

**RESULTS:** Of 18 986 participants, 11.2% reported an infant sharing a bed as a usual practice. Bed sharing increased from 1993 (6.5%) to 2010 (13.5%). Although bed sharing increased significantly among white respondents from 1993 to 2000 ( $P < .001$ ), the increase from 2001 to 2010 was not significant ( $P = .48$ ). Black and Hispanic respondents reported an increase in bed sharing throughout the study period, with no difference between the earlier and later periods ( $P = .63$  and  $P = .77$ , respectively). After accounting for the study year, factors associated with increase in infant bed sharing as a usual practice included maternal educational level of less than high school compared with college or greater (adjusted odds ratio, 1.42 [95% CI, 1.12-1.79]); black (3.47 [2.97-4.05]), Hispanic (1.33 [1.10-1.61]), and other

(2.46 [2.03-2.97]) maternal race or ethnicity compared with white race; household income of less than \$20,000 (1.69 [1.44-1.99]) and \$20,000 to \$50,000 (1.29 [1.14-1.45]) compared with greater than \$50,000; living in the West (1.61 [1.38-1.88]) or the South (1.47 [1.30-1.66]) compared with the Midwest; infants younger than 8 weeks (1.45 [1.21-1.73]) or ages 8 to 15 weeks (1.31 [1.17-1.45]) compared with 16 weeks or older; and being born prematurely compared with full-term (1.41 [1.22-1.62]). Almost 46% of the participants reported talking to a physician about bed sharing. Compared with those who did not receive advice from a physician, those who reported their physicians had a negative attitude were less likely to have the infant share a bed (adjusted odds ratio, 0.66 [95% CI, 0.53-0.82]), whereas a neutral attitude was associated with increased bed sharing (1.38 [1.05-1.80]).

**CONCLUSIONS AND RELEVANCE:** Our finding of a continual increase in bed sharing throughout the study period among black and Hispanic infants suggests that the current American Academy of Pediatrics recommendation about bed sharing is not universally followed. The factors associated with infant bed sharing may be useful in evaluating the impact of a broad intervention to change behavior.

23. *Otolaryngol Head Neck Surg.* 2013 Dec;149(6):947-53.

### **Obstructive sleep apnea: strategies for minimizing liability and enhancing patient safety.**

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**OBJECTIVE:** To characterize malpractice litigation regarding obstructive sleep apnea (OSA) and educate physicians on frequently cited factors.

**STUDY DESIGN AND SETTING:** Analysis of the Westlaw legal database.

**METHODS:** Jury verdict and settlement reports were examined for outcome, awards, patient demographic factors, defendant specialty, and alleged causes of malpractice.

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**RESULTS:** Out of 54 identified cases, 33 (61.1%) cases were resolved in favor of defendants, 12 (22.2%) via settlement, and 9 (16.7%) through jury award. Median settlement and jury awards did not significantly differ (\$750,000 vs \$550,000,  $P > .50$ ). Age and gender did not affect outcome. Otolaryngologists and anesthesiologists were the most frequently named defendants. Forty-seven cases (87.1%) stemmed from OSA patients who underwent procedures with resultant perioperative adverse events. Common alleged factors included death (48.1%), permanent deficits (42.6%), intraoperative complications (35.2%), requiring additional surgery (25.9%), anoxic brain injury (24.1%), inadequate informed consent (24.1%), inappropriate medication administration (22.2%), and inadequate monitoring (20.4%).

**CONCLUSION:** Litigation related to OSA is frequently associated with perioperative complications more than nonoperative issues such as a failure to diagnose this disorder. Nonetheless, OSA is considerably underdiagnosed, and special attention should be paid to at-risk patients, including close monitoring of their clinical status and the medications they receive. For patients with diagnosed or suspected OSA with planned operative intervention, whether for OSA or an unrelated issue, a comprehensive informed consent process detailing the factors outlined in this analysis is an effective strategy to increase communication and improve the physician-patient relationship, minimize liability, and ultimately improve patient safety.

24. *Oncol Nurs Forum.* 2013 Sep;40(5):E368-73.

### **Sleep disturbance, chronic stress, and depression in hospice nurses: testing the feasibility of an intervention.**

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**PURPOSE/OBJECTIVES:** To test the feasibility of a cognitive-behavioral therapy for an insomnia (CBT-I) intervention in chronically bereaved hospice nurses.

**DESIGN:** Five-week descriptive correlational.

**SETTING:** Nonprofit hospice in central Texas.

**SAMPLE:** 9 agency nurses providing direct patient and family care.

**METHODS:** Direct care nurses were invited to participate. Two intervention group sessions occurred at the hospice agency and included identification of dysfunctional thoughts and beliefs about sleep, stimulus control, sleep hygiene, and relaxation techniques to promote sleep. Measurements were taken at baseline and three and five weeks post intervention.

**MAIN RESEARCH VARIABLES:** Sleep quality, depressive symptoms, and narrative

reflections on the impact of sleep quality on self-care.

**FINDINGS:** Participants reported moderate-to-severe sleep disturbances and moderate depressive symptoms. The CBT-I intervention was well accepted by the participants, and on-site delivery increased participation.

**CONCLUSIONS:** Additional longitudinal study is needed to investigate the effectiveness of CBT-I interventions to improve self-care among hospice nurses who are at high risk for compassion fatigue and, subsequently, leaving hospice care.

**IMPLICATIONS FOR NURSING:** Hospice nurses are exposed to chronic bereavement that can result in sleep disturbances, which can negatively affect every aspect of hospice nurses' lives. Cognitive-behavioral sleep interventions show promise in teaching hospice nurses how to care for themselves by getting quality sleep.

**KNOWLEDGE TRANSLATION:** Identifying the risks for sleep disturbances and depressive symptoms in hospice nurses will allow for effective, individualized interventions to help promote health and well-being. If hospice nurses achieve quality sleep, they may remain in the profession without suffering from chronic bereavement, which can result in compassion fatigue. A CBT-I intervention delivered at the agency and in a group format was feasible and acceptable by study participants.

25. *BMC Med Educ.* 2013 Aug 29;13:115.

### **Shifting perceptions: a pre-post study to assess the impact of a senior resident rotation bundle.**

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**BACKGROUND:** Extended duty hours for residents are associated with negative consequences. Strategies to accommodate duty hour restrictions may also have unintended impacts. To eliminate extended duty hours and potentially lessen these impacts, we developed a senior resident rotation bundle that integrates a night float system, educational sessions on sleep hygiene, an electronic handover tool, and a simulation-based medical education curriculum. The aim of this study was to assess internal medicine residents' perceptions of the impact of the bundle on three domains: the senior residents' wellness, ability to deliver quality health care, and medical education experience.

**METHODS:** This prospective study compared eligible residents' experiences (N = 67) before and after a six-month trial of the bundle at a training program in western Canada. Data was collected using an on-line survey. Pre- and post-intervention scores for the final sample (N = 50) were presented as means and compared using the t-test for paired samples.

**RESULTS:** Participants felt that most aspects of the three domains were unaffected by the introduction of the bundle. Four improved and two worsened perception shifts emerged post-intervention: less exposure to personal harm, reduced potential for medical error, more successful teaching, fewer disruptions to other rotations, increased conflicting role demands and less staff physician supervision.

**CONCLUSIONS:** The rotation bundle integrates components that potentially ease some of the perceived negative consequences of night float rotations and duty hour restrictions. Future areas of study should include objective measures of the three domains to validate our study participants' perceptions.

26. *PLoS One*. 2013 Aug 19;8(8):e71658. doi: 10.1371/journal.pone.0071658. eCollection 2013.

**Urinary interleukin-8 is a biomarker of stress in emergency physicians, especially with advancing age—the JOBSTRESS\* randomized trial.**

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**BACKGROUND:** Emergency physicians are exposed to greater stress during a 24-hour shift (24 hS) than a 14-hour night shift (14 hS), with an impact lasting several days. Interleukin-8 (IL-8) is postulated to be a chronic stress biomarker. However, no studies have tracked IL-8 over several shifts or used it for monitoring short-term residual stress. The IL-8 response to the shifts may also increase with age. Conveniently, IL-8 can be measured non-intrusively from urine.

**METHODS:** We conducted a shifts-randomized trial comparing 17 emergency physicians' urinary IL-8 levels during a 24 hS, a 14 hS, and a control day (clerical work on return from leave). Mean levels of IL-8 were compared using a Wilcoxon matched-pairs test. Independent associations of key factors including shifts, stress, and age with IL-8 levels were further assessed in a multivariable generalized estimating equations model.

**RESULTS:** Mean urinary IL-8 levels almost doubled during and after a 24 hS compared with a 14 hS or a control day. Furthermore, IL-8 levels failed to return to control values at the end of the third day after the shift despite a rest day following the 24 hS. In the multivariable model, engaging in a 24 hS, self-reported stress, and age were independently associated with higher IL-8 levels. A 24 hS significantly increased IL-8 levels by 1.9 ng ( $p = .007$ ). Similarly, for every unit increase in self-reported stress, there was a 0.11 ng increase in IL-8 levels ( $p = .003$ ); and for every one year advance in age of physicians, IL-8 levels also increased by 0.11 ng ( $p = .018$ ).

**CONCLUSION:** The 24 hS generated a prolonged response of the immune system. Urinary IL-8 was a strong biomarker of stress under intensive and prolonged demands, both acutely and over time. Because elevated IL-8 levels are associated with cardiovascular disease and negative psychological consequences, we suggest that emergency physicians limit their exposure to 24 hS, especially with advancing age.