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Fatigue management for optimal well-being and performance

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The International Conference on Residency Education
La Conférence internationale sur la formation des résidents



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Christopher Hurst

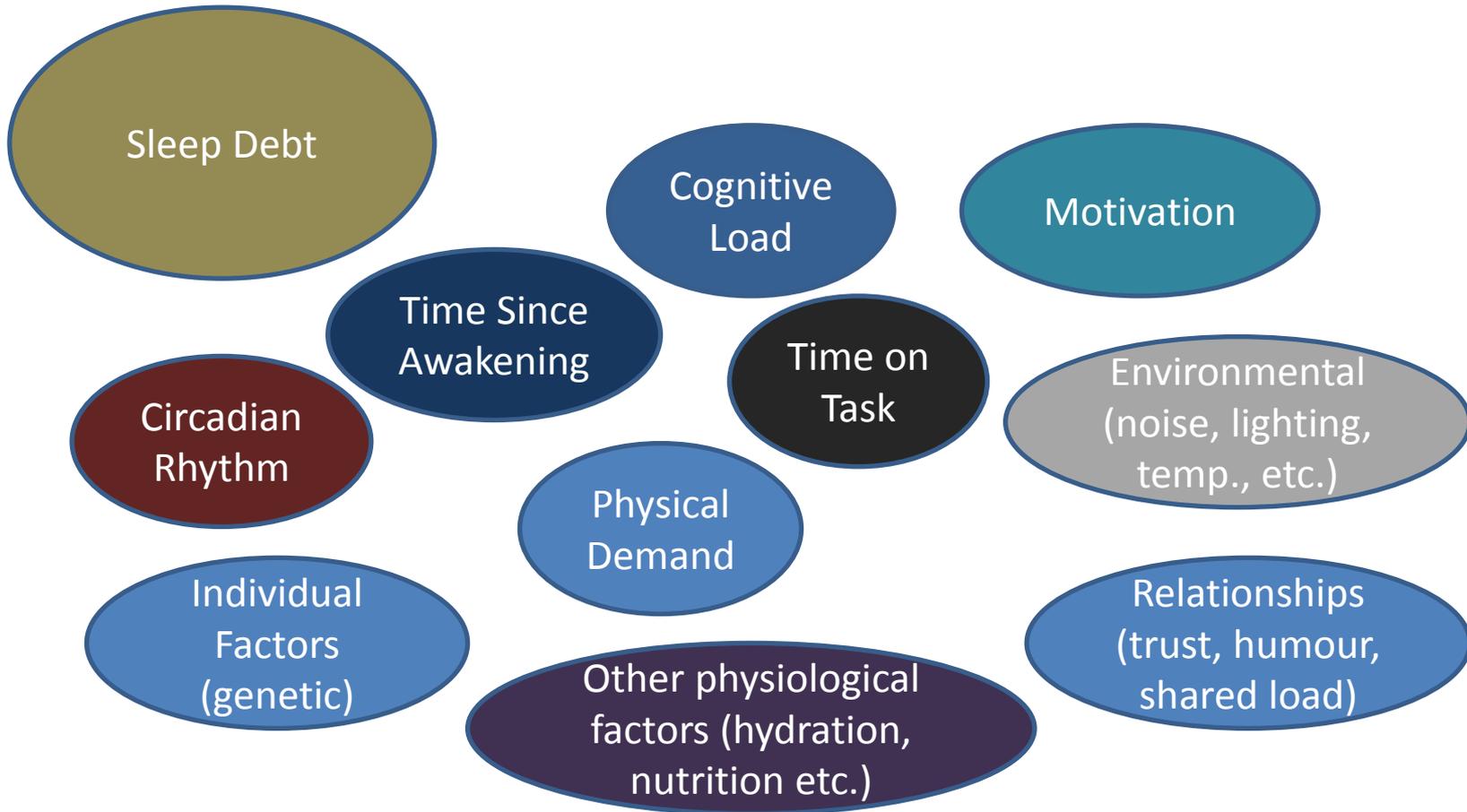
Susan Edwards

Learning Objectives:

- Describe the multi-factorial aspects of fatigue in medical practice;
- Discuss the effects of fatigue on personal well-being and clinical performance;
- Identify concrete strategies for managing fatigue.

What creates fatigue in your daily work life?

Multiple Fatigue Factors



Individual Differences in Fatigue Vulnerability

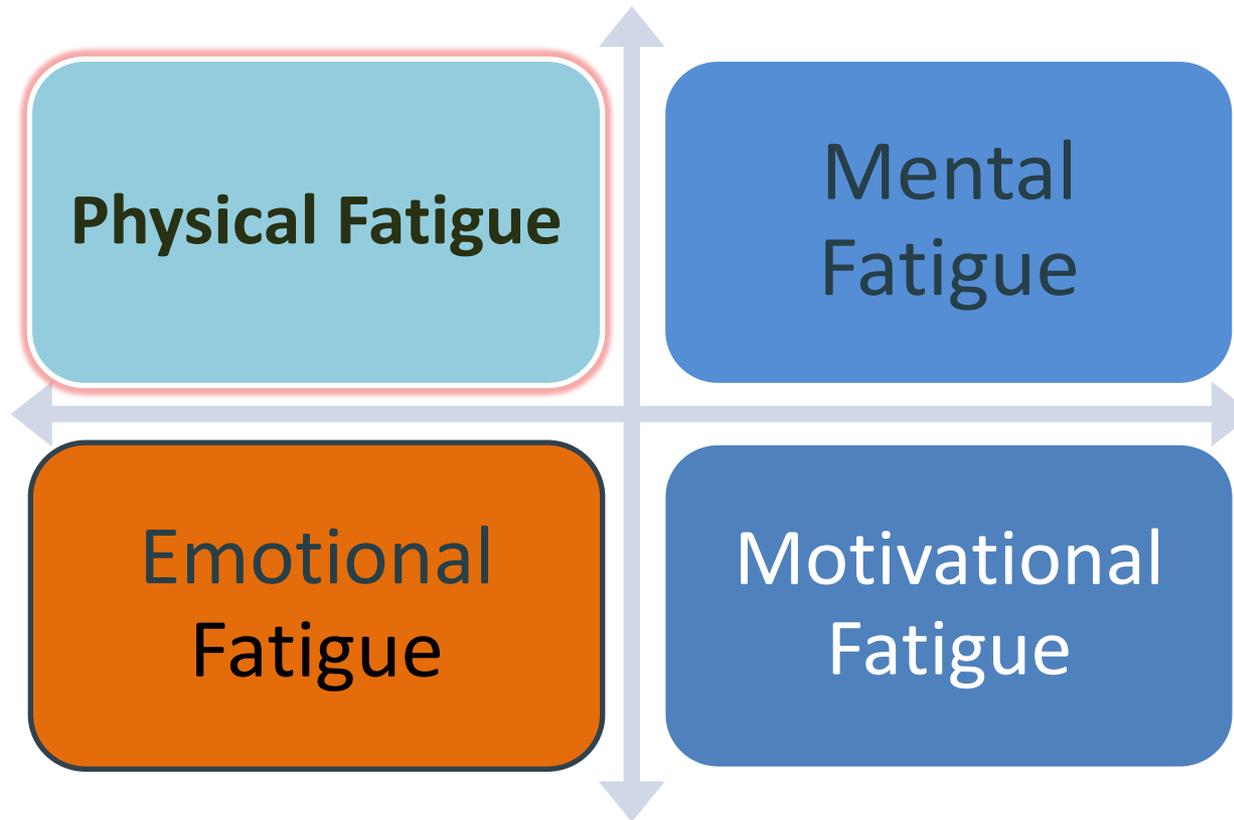
- The scientific and operational communities' reliance on group data as opposed to individual data may entail substantial mis-estimation of the impact of job-related stressors on safety and performance.
- Van Dongen HPA, Caldwell JA, Caldwell JL (2006) Investigating systematic individual differences in sleep deprived performance on a high-fidelity flight simulator. *Behav Res Meth* 38, 333–43.

Where is Your Focus?

In more stressful contexts, attention becomes highly focused on tasks we identify as being of dominant importance... our ability to differentiate between relevant cues and irrelevant cues is impaired, often resulting in a perseveration of attention on a narrow, sometimes inappropriate set of stimuli.

Moulton et al. Slowing down when you should. *Acad Med*, vol.82, No.10 October 2007.

Key Areas of Fatigue



Decision Fatigue

- *"We find that the percentage of favorable rulings drops gradually from 65% to nearly zero within each decision session and returns abruptly to 65% after a break."*

Danzigera (2011)

Nutrition and Cognition

- Improved speed and accuracy on simple and complex cognitive tasks
- Lower and less variable blood glucose levels
- Higher nutrient intake, better hydration
- *“I do feel sleepy after the mid day meal... At times I am short tempered with staff and surly and sometimes they will bring me food and it helps. Does it affect how I treat colleagues? Yes, from an emotional and interpersonal way, but heaven forbid it would impact patient care. I don't think so. I would notice it and eat.”*

Physician nutrition and cognition during work hours: effect of a nutrition based intervention Lemaire et al. BMC Health Services Research 2010, 10:24

Emotional Exhaustion

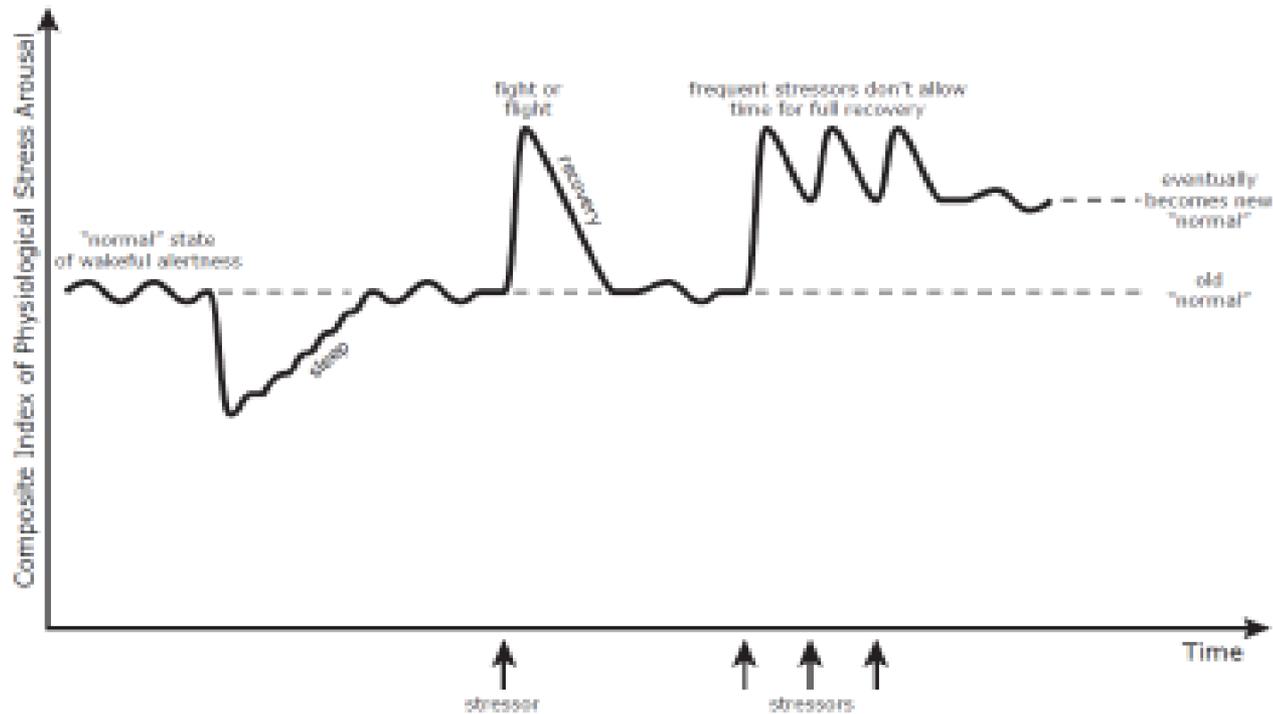
- The three most often used workplace coping strategies positively correlated with feeling emotionally exhausted were:
 - Keeping stress to oneself
 - Concentrating on what to do next
 - Going on as if nothing happened
- Lemaire J, Wallace J. Not all coping strategies are created equal: a mixed methods study exploring physicians' self reported coping strategies. BMC Health Services Research 2010, 10:208

Physical Fatigue

Monitoring, sustaining and replenishing our physical energies are the basic foundational activities upon which we build our personal and professional well-being and success



Chronic Stress and Recovery



- Sisley R. Henning M., Hawken S., Moir F. A Conceptual Model of Workplace Stress: The issue of accumulation and recovery and the health professional. *New Zealand Journal of Employment Relations*. 2010. 35(2):3-15

Sleep Deprivation

“Sleep loss ... can be associated with decrements in vigilance, reaction time, psychomotor co-ordination, information processing, and decision making (e.g., fixation on certain aspects of a situation to the neglect of other information).”

Rosekind, M.R. et al. Managing Fatigue in Operational Settings 1: Physiological Considerations and Countermeasures. *Behavioral Medicine*, 1996. 21, 157-165

Recognizing Sleep Deprivation in Residency

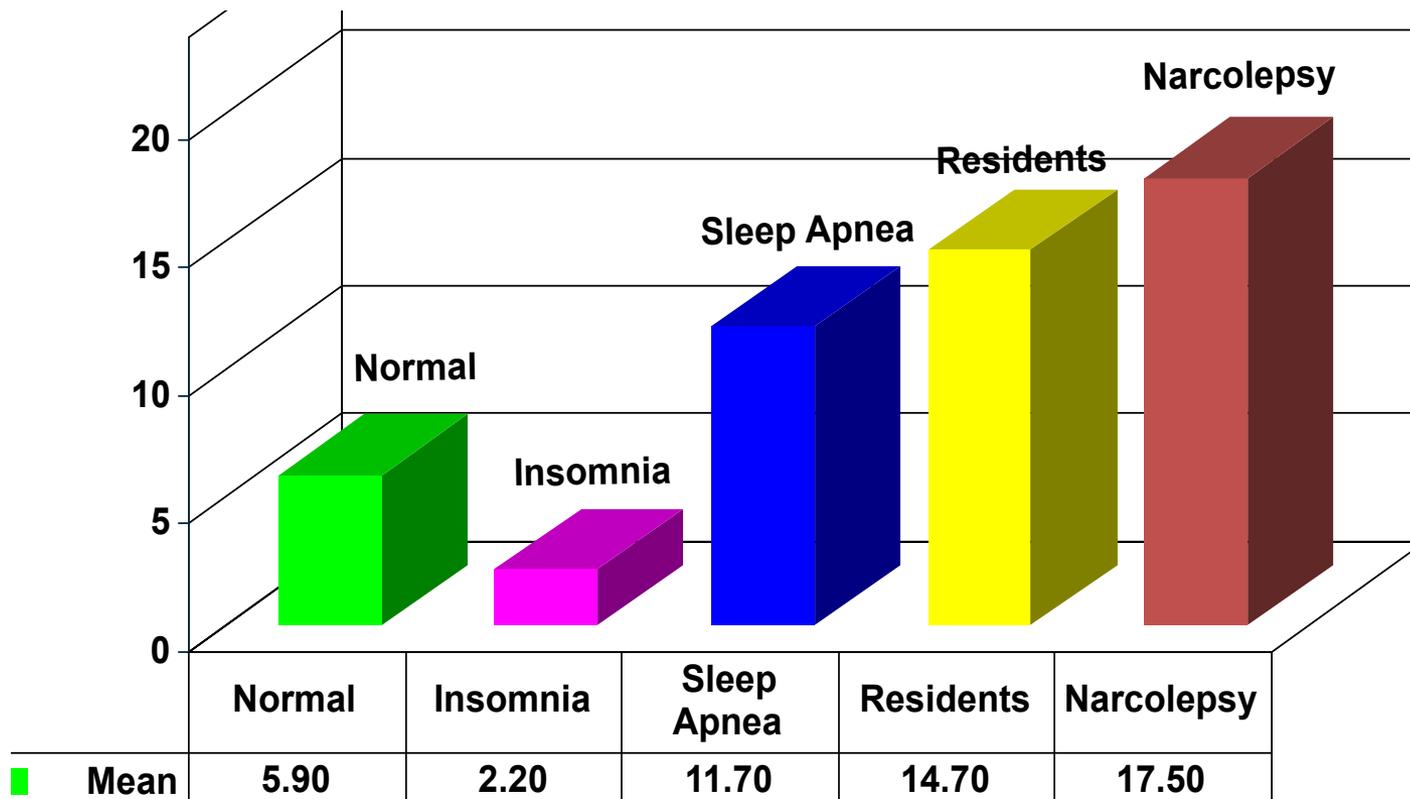
- Repeatedly yawning and “nodding off” during conferences or other sedentary activities (driving)
- Loss of ability to perform usual activities quickly
- Poor memory, concentration, judgment
- Irritability, moodiness, depression
- Dozing off while writing notes/orders or while reviewing medications/labs
- Repeatedly checking your work

Tisha Wang, MD UCLA The Effects of Sleep Deprivation and Implications for Residency Training



American Academy of Sleep Medicine

Epworth Sleepiness Scale



Sleepiness in residents is equivalent to that found in patients with serious sleep disorders.

The Essential Role of Sleep

- Sleep will not only reset alertness, mood, and performance capacity to normal levels after a night of sleep. It will also regenerate the CNS, the metabolic system, the endocrine system, and the immune system.

Åkerstedt, Nilsson, Kecklund, "Sleep and recovery", Sabine Sonnentag, Pamela L. Perrewé, Daniel C. Ganster, in (ed.) Current Perspectives on Job-Stress Recovery (Research in Occupational Stress and Well-being, Volume 7), Emerald Group Publishing Limited, 2009. pp. 205 - 247

Sleep Inertia and the Pager

- Sleep inertia dissipates exponentially, but the first 15–30 minutes after waking are a particularly vulnerable period.
- Performance decrements at this time can exceed those experiences after 24 hours of continuous wakefulness.
- Lockley SW, Barger LK, Ayas NT, Rothschild JM, Czeisler CA, Landrigan CP; Effects of health care provider work hours and sleep deprivation on safety and performance. *Jt Comm J Qual Patient Saf.* 2007 Nov;33(11 Suppl):7-18

Lockley (2007)

What are your best strategies for managing fatigue for your self and your trainees?

Strategic Caffeine Use:

- Strategic caffeine use includes avoiding it when alert-at the beginning of a work period or just after a nap. Consumption should begin about an hour before expected times of decreased alertness (e.g., 3am – 5am).

Stay Active and Engaged

- Try to stay active during on-call shifts (e.g., take a walk during breaks or climb stairs between floors).

Strategic Napping

- Brief (1 - 2 hours) napping prior to prolonged period of sleep loss.
- Naps should ideally be frequent (every 2 - 3 hours) and brief (15 - 30 minutes).
- If you can pick just one nap, get it as early in the period of sleep deprivation.
- Time naps during circadian window of opportunity, between 2 - 5 a.m. and 2 - 5 p.m.
- Kimoff J., Nguyen A. Managing Sleepiness and Fatigue in Medical Training: Introduction to the Practice of Medicine: Med 3 July 2007

Recovery Sleep:

- Be sure to get adequate sleep before anticipated sleep loss
- Plan for adequate recovery sleep. Data indicates that it takes two nights of extended sleep to restore alertness after a night of total sleep loss.
- A period of recovery sleep time greater than 10 h TIB would be needed for full recovery after 5 nights of sleep restriction to 4 h TIB per night.
- Banks S., Van Dongen H., Maislin G., Dinges D. Neurobehavioral Recovery Dynamics from Sleep Restriction. SLEEP, Vol. 33, No. 8, 2010
- There is evidence that melatonin has a soporific effect ... particularly when taken to phase-advance the sleep period.

Arnedt (2005)

Pre-Sleep Relaxation Ritual

Body scan & Breath

Experimenting with Fatigue Management In Training Programs

- Are there fatigue management strategies you would like to experiment with at the individual, team or department level?

Top Ten Tips for Coping with Call One Night at a Time

Take time to eat, drink plenty of fluids during the day, and use the bathroom

Go outside for a few moments

Call significant others at least once during night call

Focus on the positive

Remember there are choices, even the choice of career path

Seek sanctuary when necessary

Use sleep discipline on call and post-call

Use extra caution when driving home post-call, and arrive alive

Use sleep hygiene strategies for the long-term goal of surviving residency

Alexander D., Bushell A. Coping with Night Call: Part II: Developing Strategies and Skills, and the Top Ten Tips for Survival. Hospital Physician. 1999

Strategies for on-call

- Pay off sleep debt before on-call
- Drink more water
- Take the stairs
- Experiment with breaks
- Use Caffeine strategically
- Group your tasks
- Lie down/sleep when you can
- Stay Engaged
- Delegate/share decision making
- Prioritize
- Eat a Cliff bar
- Use a to do list with checkboxes
- Consciously relax
- Wear good shoes
- Avoid dark or warm rooms
- Complete most difficult tasks early

- Be kind/ supportive/affable
- Get outside for 5 minutes
- Give yourself more time to do difficult tasks
- Remember what's most important
- Check-in with someone close to you
- Take time for recovery sleep
- Let someone know if you are severely fatigued
- Know your stop point
- Consult/ask for help

<http://efficientmd.blogspot.ca/2008/09/100-tips-for-being-on-call-in-hospital.html>

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Thank You / Questions



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Bibliography:

1. Åkerstedt, Nilsson, Kecklund, "Sleep and recovery", Sabine Sonnentag, Pamela L. Perrewé, Daniel C. Ganster, in (ed.) Current Perspectives on Job-Stress Recovery (Research in Occupational Stress and Well-being, Volume 7), Emerald Group Publishing Limited, 2009. pp. 205 – 247
2. Alexander D., Bushell A. Coping with Night Call: Part II: Developing Strategies and Skills, and the Top Ten Tips for Survival. Hospital Physician. 1999
3. Arnedt J, Owens J, Crouch M, Stahl J, Carskadon MA. Neurobehavioral Performance of Residents After Heavy Night Call vs After Alcohol Ingestion. *JAMA*. 2005;294(9):1025-1033.
4. Banks S., Van Dongen H., Maislin G., Dinges D. Neurobehavioral Recovery Dynamics from Sleep Restriction. *SLEEP*, Vol. 33, No. 8, 2010
5. Danziger S, Levav J, Avnaim-Pessoa L. Extraneous factors in judicial decisions. *Proc Nat Acad Sci*; 2011. 108:6889–92
6. Heifetz R., Linsky M., Grashow A The Practice of Adaptive Leadership: Tools and Tactics for Changing Your Organization and the World. 2009. Boston: Harvard Business Press Books
7. Lemaire et al..Physician nutrition and cognition during work hours: effect of a nutrition based intervention *BMC Health Services Research*, 2010; 10:24
8. Lemaire J, Wallace J.. Not all coping strategies are created equal: a mixed methods study exploring physicians' self reported coping strategies. *BMC Health Services Research* 2010, 10:208
9. Lockley SW, Barger LK, Ayas NT, Rothschild JM, Czeisler CA, Landrigan CP;.Effects of health care provider work hours and sleep deprivation on safety and performance. *Jt Comm J Qual Patient Saf*. 2007;Nov;33(11 Suppl):7-18
10. Moulton et al. Slowing down when you should. *Acad Med*, vol.82, No.10 October 2007.
11. Rosekind, M.R. et al. Managing Fatigue in Operational Settings 1: Physiological Considerations and Countermeasures. *Behavioral Medicine*,.1996: 21, 157-165
12. Sisley R. Henning M., Hawken S., Moir F.. A Conceptual Model of Workplace Stress: The issue of accumulation and recovery and the health professional. *New Zealand Journal of Employment Relations*. 2010;35(2):3-15
13. Van Dongen HPA, Caldwell JA, Caldwell JL. Investigating systematic individual differences in sleep deprived performance on a high-fidelity flight simulator. *Behav Res Meth* 2006; 38, 333–43.

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