



Sleep Medicine and Medical Physiology Curriculum

Dr. Tripat Deep Singh

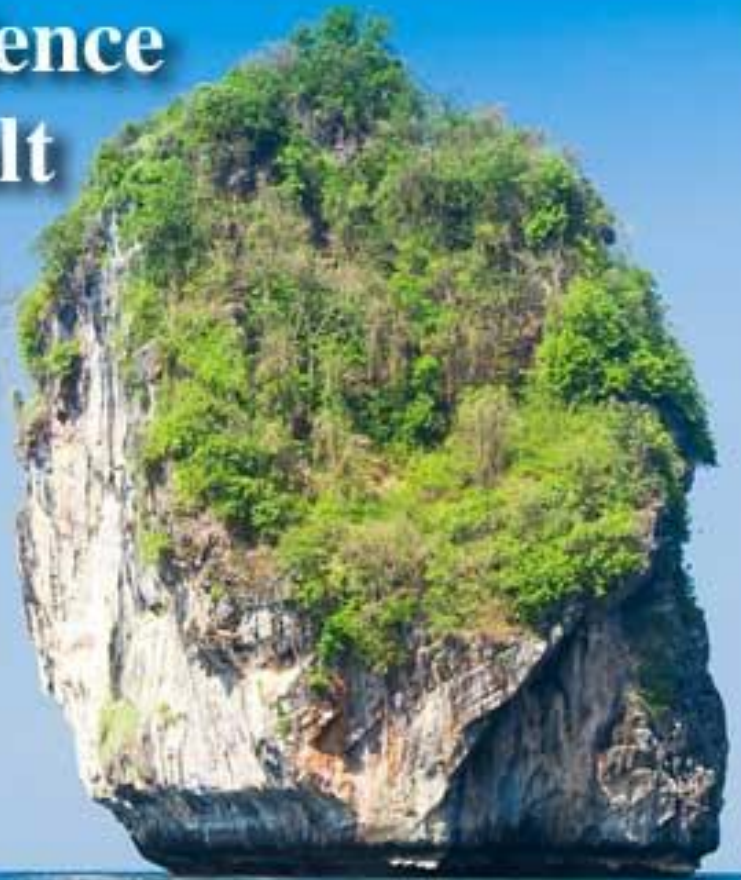
(MBBS, MD, RPSGT, RST)

International Sleep Specialist

(World Sleep Federation program)

**It is a common experience
that a problem difficult
at night is resolved in
the morning after the
committee of sleep
has worked on it.**

John Steinbeck






**SLEEP IS THE
BEST
MEDITATION.**

Dalai Lama

The spiritual head of Tibetan Buddhism

QuoteHD.com

(1391-1474)



***A good laugh and a
long sleep are the
best cures in the
doctor's book.***

gadel.info

Irish proverb



*My only relief is to sleep. When I'm sleeping,
I'm not sad, I'm not angry, I'm not lonely.*


idlehearts.com


I'm nothing.

~ Jillian Medoff



S L E E P

Without it, the world looks pretty bleak.



How many hours are dedicated to teaching Sleep Physiology in Medical curriculum?

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[Physician well-being: prevalence of burnout and associated risk factors in a tertiary hospital, Riyadh,](#)

1. [Saudi Arabia.](#)

Aldrees TM, Aleissa S, Zamakhshary M, Badri M, Sadat-Ali M.

Ann Saudi Med. 2013 Sep-Oct;33(5):451-6. doi: 10.5144/0256-4947.2013.451.

PMID: 24188938 [PubMed - in process]

[Related citations](#)

[Neurobiological consequences of sleep deprivation.](#)

2. Alkadhi K, Zagaar M, Alhaider I, Salim S, Aleisa A.

Curr Neuropharmacol. 2013 May;11(3):231-49. doi: 10.2174/1570159X11311030001.

PMID: 24179461 [PubMed] **Free PMC Article**

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[USEFUL FIELD OF VIEW IMPAIRMENTS IN DRIVERS WITH OBSTRUCTIVE SLEEP APNEA.](#)

1. Tippin J, Sparks J, Rizzo M.
Proc Int Driv Symp Hum Factors Driv Assess Train Veh Des. 2009 Dec 1;2009:454-459.
PMID: 24273754 [PubMed]
[Related citations](#)

[The mandibular response to occlusal relief using a flat guidance splint.](#)

2. Reichardt G, Miyakawa Y, Otsuka T, Sato S.
Int J Stomatol Occlusion Med. 2013;6:134-139. Epub 2013 Sep 17.
PMID: 24273617 [PubMed]
[Related citations](#)

ICSD-2

- I. Insomnias
- II. Sleep Related Breathing Disorders
- III. Hypersomnias of Central Origin Not Due to a Circadian Rhythm Sleep Disorder, Sleep Related Breathing Disorder, or Other Cause of Disturbed Nocturnal Sleep
- IV. Circadian Rhythm Sleep Disorders
- V. Parasomnias
- VI. Sleep Related Movement Disorders
- VII. Isolated Symptoms, Apparently Normal Variants, and Unresolved Issues

Prevalence of Sleep Disorders

<u>Condition</u>	<u>All Adults</u>	<u>Elderly</u>
Insomnia 1	0-20%	40-50%
Sleep Apnea	1%-25%	24%-40%
Periodic Limb Movements	2-5%	30%-45%
Restless Leg Syndrome	2%-15%	12%-30%
REM Sleep Behavior D/O	0.5%	0.5%-2%

Young T, et al., Ancoli-Israel S, et al., Sleep 2001; Mant E, et al., Age and Ageing 1992; Ancoli-Israel S, et al. Sleep 1993; Phillips BA, et al., Sleep 1994; Hoch CC, et al., Sleep 1994; O'Keefe ST, et al., Age and Ageing 1994; Phillips B, et al., Arch Int Med 2000; Allen R, et al. Arch Int Med 2005


Study	Prevalence of OSA	Prevalence of OSAS	Year of Publication
Udwadia et (Hospital based)	19.5%	7.5%	2004
Sharma et al	13.7%	3.6%	2006
Vijayan et al	3.5%	1.7%	2006
Reddy et al	9.3%	2.8%	2009

Study of the Knowledge, Beliefs, and Practice of Sleep Among Medical Undergraduates of Tamilnadu, India

G Sivagnanam, MD, P Thirumalaikolundusubramanian, MD, [...], and J Rajeswari

Conclusion

We conclude that future doctors have insufficient knowledge with more misconceptions (indirectly reflecting inadequate knowledge) regarding sleep. Hence, there is a compelling need to develop an educational strategy to overcome misconceptions and improve knowledge regarding sleep-related problems and proper sleep practices among students.

 PubMed is open, however it is being maintained with minimal staffing due to the lapse in government funding. Information will be updated to the extent we can respond to urgent operational inquiries. For updates regarding government operating status see USA.gov.

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Sleep Med. 2011 Oct;12(9):928-31. doi: 10.1016/j.sleep.2011.07.001. Epub 2011 Sep 16.

Sleep education in medical school curriculum: a glimpse across countries.

[Mindell JA](#), [Bartle A](#), [Wahab NA](#), [Ahn Y](#), [Ramamurthy MB](#), [Huong HT](#), [Kohyama J](#), [Ruangdaraganon N](#), [Sekartini R](#), [Teng A](#), [Goh DY](#).

The Children's Hospital of Philadelphia and Saint Joseph's University, Philadelphia, PA, USA. jmindell@sju.edu

Abstract

BACKGROUND: The objective of this study was to assess the prevalence of education about sleep and sleep disorders in medical school education and to identify barriers to providing such education.

METHODS: Surveys were sent to 409 medical schools across 12 countries (Australia, India, Indonesia, Japan, Malaysia, New Zealand, Singapore, South Korea, Thailand, United States, Canada and Viet Nam).

RESULTS: Overall, the response rate was 25.9%, ranging from 0% in some countries (India) to 100% in other countries (New Zealand and Singapore). Overall, the average amount of time spent on sleep education is just under 2.5h, with 27% responding that their medical school provides no sleep education. Three countries (Indonesia, Malaysia, and Viet Nam) provide no education, and only Australia and the United States/Canada provide more than 3h of education. Paediatric topics were covered for a mere 17 min compared to over 2h on adult-related topics.

CONCLUSION: These results suggest that there continues to be very limited coverage of sleep in medical school education despite an incredible increase in acknowledgement of the importance of sleep and need for recognition of sleep disorders by physicians.



• How many hours are dedicated to teaching Sleep Physiology and Sleep disorders in our Medical curriculum?

Clinician's
Suspicion of
Sleep disorder
on Sleep history



Sent to Sleep lab

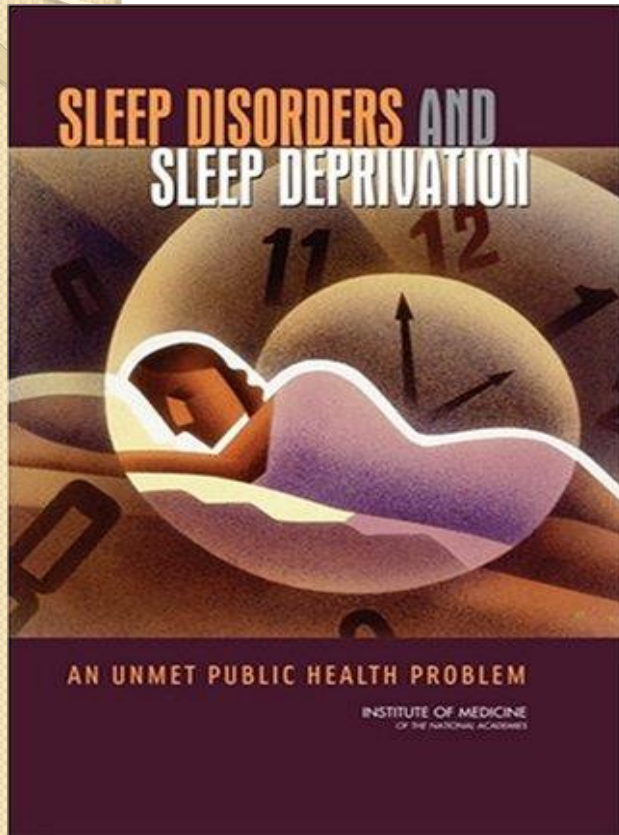


Report and
treatment

Current Challenges

- Huge burden of undiagnosed Sleep disorders
- Lack of awareness among public and Medical community regarding Sleep disorders
- Very few Doctor's trained in Sleep Medicine
- Even few Doctor's trained in aspects of Sleep lab management which include-
 - ✓ Patient care
 - ✓ Signal acquisition
 - ✓ Signal processing and analysis
 - ✓ Assuring quality signal acquisition and analysis
 - ✓ Performing different procedures in the Sleep lab- Diagnostic Sleep study, Titration Sleep study, Split night Sleep study, MSLT, MWT, REM Behavioral disorder studies, nocturnal seizure studies, Actigraphy, Portable Sleep studies
- Very few technologists to assist in Sleep lab
- Very few Sleep labs with adequate and proficient staff on regular basis

Institute of Medicine Report, 2006



- Increase awareness of the burden of Sleep loss and sleep disorders among general public
- Expand awareness among healthcare professionals through education and training
- Establish the workforce to meet the clinical and scientific demands of the field
- Increase investment in interdisciplinary sleep programs at academic health centres that emphasize long term clinical care, training and research

Barriers to implementation of sleep related Medical Curriculum

- Relatively new field, cutting across many traditional disciplinary boundaries. There is a need to implement an interdisciplinary Sleep Medicine curriculum
- Importance of sleep to good health is poorly appreciated, hence underrepresented in Medical curriculum
- Limited availability of faculty and mentors

Academic Sleep Centers of the Future: An Achievable Vision

Michael H. Silber, MBChB

President, American Academy of Sleep Medicine

- **Setting up interdisciplinary academic Sleep units as independent entities outside of traditional divisions and departments**
- It should incorporate clinical, research and educational missions within a single entity
- Should report directly to Medical School and Hospital leadership
- Centre should have direct responsibility of hiring faculty
- Control over the clinical and research budgets and revenue should be in the hands of the centre
- Connections to different departments should be maintained to promote research
- **Associations should be developed with other specialists such as dentists, Psychologists and Sleep Scientists**
- Comprehensive Clinical services
- **Education program which should include Sleep medicine fellowships, training of research fellows, teaching of medical students and allied health professionals**

Need of the Hour

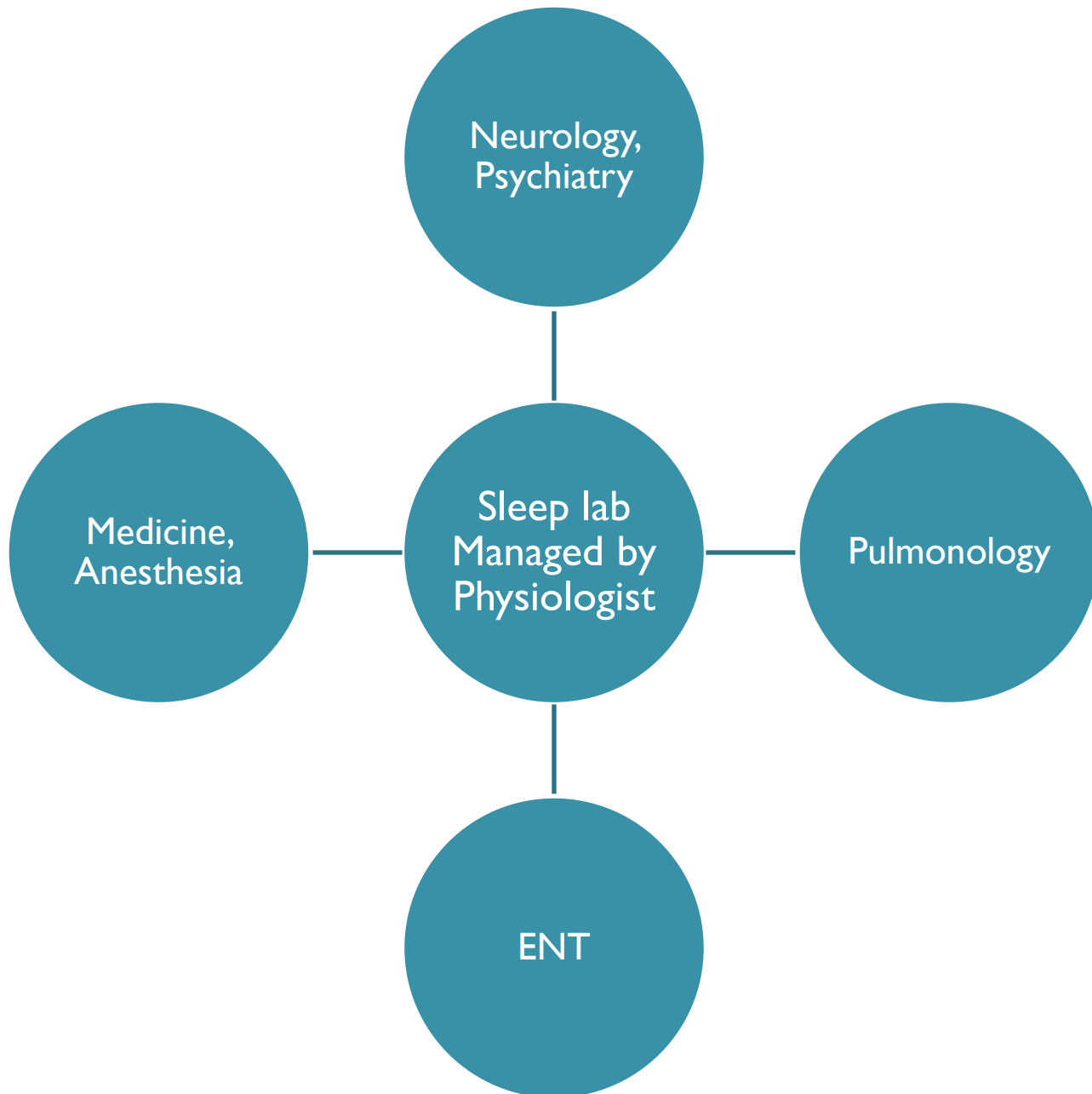
- Increase awareness of sleep disorders and healthy Sleep practices in public
- Basic and Clinical Sciences work hand in hand to tackle the burden of Sleep disorders
- Basic and Clinical Sciences work hand in hand to do research to understand the mechanisms of Sleep disorders


Role of Physiologist

- By their basic training Medical Physiologists are in best position for ensuring good-
 - ✓ Patient care
 - ✓ Studying mechanisms of Sleep disorders
 - ✓ Signal acquisition
 - ✓ Signal processing and analysis
 - ✓ Quality signal acquisition and analysis
 - ✓ Performing different procedures in the Sleep lab-
Diagnostic Sleep study, Titration Sleep study, Split night Sleep study, MSLT, MWT, REM Behavioral disorder studies, nocturnal seizure studies, Actigraphy, Portable Sleep studies

Proposed Model

- Physiologists manage the day to day activity of the Sleep labs assuring quality control, so that our Clinician friends have not to worry about quality control of the Sleep lab
- Physiologists take responsibility of the treatment protocols in the Sleep lab
- Physiologists run the compliance and follow up Clinics for Sleep disordered breathing patients



- 
- Physiologists take the lead to study Circadian Physiology and study changes in Circadian rhythm patterns and its effects in Indian Population as India is adopting 24/7 working pattern

Scope of this model

- Treatment and follow up of patients
- Training centre for future Doctors and technologists
- Research
- Scoring centre for outsourced Sleep studies
- Referral centre for other hospitals
- Provide Corporate services for Sleep health checkup
- A common platform where Basic and Clinical sciences contribute together towards patient welfare

Steps needed

- Taking up training in Sleep Physiology and Sleep Medicine in MD Physiology curriculum
- Incorporating Sleep Physiology and Sleep medicine into undergraduate curriculum



THANK YOU