

Journal of Clinical and Biomedical Sciences

Journal homepage: www.jcbsonline.ac.in

## Guest Editorial

# Sleep facts and health issues.. time has come to wake up from deep slumber and act

Sleep and dreams have fascinated people from different walks of life since time immemorial. It is man's imaginative prowess on sleep that perhaps provided eternity to Joe in Pickwick papers of Charles Dickensand Joe's sleep has been described as 'Pickwickian syndrome' and subsequently the Obstructive Sleep Apnea Syndrome by today's medical science. Similarly, Kumbhakarna's ( one of the most interesting characters in the Ramayana epic ) sleeping pattern is compared to the 'Sleeping Beauty Syndrome'. William Shakesphere's descriptions on sleep and dreams are really the true examples of the man's imaginative prowess on sleep. Dreams too can be creative! The dreams of August Kekule, Dmitry Mendeleyev and Otto Loewi have magnetized and kick started the scientific discoveries respectively of Benzene ring, periodic table and about the chemical neurotransmission.

We spent one third of our life sleeping! It is not an exaggeration though. On an average an adult human being needs to have 6 to 8 hours of sleep or in other words, we need to have 'enough sleep' to sustain performance throughout waking and to prevent the day time sleepiness.

Adult human sleep architecture has a highly stable morphology and signifies the important functions it mediates; from growth and development of an organism to memory consolidation. Sleep is essential for energy conservation, neuronal recuperation and maintaining homeostatic functions. The phenomenon of sleep rebound following sleep restriction or short term sleep deprivation indicates that sleep is essential for fitness. Studies have demonstrated the harmful consequences of sleep deprivation across animal kingdom from drosophila to human subjects. Sleep deprivation affects the immune system, increases the risk of cardiovascular disorders, temperature regulation, and metabolic disorders. Sleep loss impairs alertness and memory, causes mood changes, and frustration, difficulty in controlling emotions, disorientation, confusion dangerous situations. Drowsiness alone accounts for almost 100,000 traffic accidents in a year in the U.S (as per the National Highway Traffic Safety Administration). Several catastrophes such as the Chernobyl nuclear disaster, the Bhopal gas tragedy and one of the worst aviation disasters reported in the year 2010 for Air India Express Flight 812 have been attributed (to certain extant) to the irresistible fatigue and faulty decision making associated with sleep loss and sleep deprivation.

Sleep disturbances during development affect overall mental and physical development. Accordingly, the poor cognitive and psychological functioning associated with attention deficit hyperactive disorder, autism, schizophrenia, depression are attributed to the defective sleep maturation process during development. The normal sleep pattern and quality is compromised in conditions such as aging, cardiopulmonary diseases, metabolic, neurologic as well as psychiatric diseases.

Though the prevalence of sleep associated disorders accounts up to 25 % worldwide, sleep disorders remain poorly identified, incorrectly diagnosed and treated even in the developed countries. According to the International Classification of Sleep Disorders, more than 80 different types of sleep disorders have been identified. Though the prevalence of sleep associated disorders accounts up to 25% worldwide, sleep disorders remain poorly identified, diagnosed and treated even in the developed countries. Daytime sleepiness accounts for approximately 35 to 40% of the U.S. adult population due to inadequate amount of night sleep. Insomnia is reported quite extensively and the National Institutes of Health (NIH) recognizes it as a chronic disorder with significant morbidity. Similarly, other sleep disorders

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like Restless legs syndrome, sleep paralysis and Narcolepsy have been studied extensively whereas parasomnias are poorly understood.

The prevalence, burden, and management of sleep disorders are often ignored or over looked in developing countries. In India, we don't have any large cohort studies for any of the sleep disorders except for clinical studies on obstructive sleep apnea and related disorders. Sleep research in India is in its infancy and is restricted to very few Institutions and Universities. Prof. V. Mohan Kumar AIIMS, New Delhi and his team pioneered sleep research in 1980s. His research contributions in understanding the role of pre optic area in thermoregulation and sleep regulations have been recognized by the scientific community worldwide. The contributions of Prof. M. K. Chandrasekharan from Madurai Kamaraj University has contributed to a great extent in understanding the importance of circadian rhythm of sleep wake cycle. He pioneered sleep studies in isolation chambers to understand the variations in sleep wake rhythms in the absence of natural zeitgebers (time givers) such as daylight and darkness, news papers and TV, radio etc. Institutions like Central Psychiatric Institute, Ranchi, All India Institute of Medical Sciences, New Delhi, National Institute of Mental Health and Neuro Sciences, Bangalore, Sri Chithra Thinunal Institute of Medical Sciences & Technology, Trivandrum are some premier institutions where active research studies on sleep have been initiated.

Like most of the bigger cities of the world, some of our Indian cities too never sleep in the night and became a 24X7 society. With changing lifestyle and food habits, we too are beginning to learn more about the prevalence of sleep disorders in our country, viz; shift workers sleep disorder, circadian rhythm disorders, insomnia, parasomnia, narcolepsy, Restless leg syndrome, REM sleep behavior disorder etc. and their long term consequences on quality of life. Obstructive sleep apnea is highly prevalent in India and is linked to serious diseases like high obesity, hypertension, stroke, heart disease, diabetes etc. Similarly shift workers sleep disorders lead to alarming health consequences. Circadian rhythm disorders which are on the rise among the shift workers. Insomnia is the most common sleep disorder and patients with chronic insomnia have a higher incidence of physical and mental health problems and require more healthcare services. Sleep in women is another area of importance to investigate. By the start of 21$^{st}$ century, several of the multispecialty hospitals have recognized the relevance of sleep medicine and research and have introduced sleep medicine departments. However this needs to percolate to all levels of medical education in order to equip the health care professionals ready to handle

The time has come to prospectively look into the problems of sleep and sleep disorders in India and for the policy makers to take corrective measures to overcome the burden. The time devoted to sleep medicine in medical schools is extremely limited in our country due to reasons; lack of awareness, inadequate resources for teaching etc. The time has come to seriously under take preventive measures for problems of sleep associated health consequences, to introduce sleep medicine as a part of medical curriculum in medical colleges and to initiate awareness/ educative programs to the public on sleep and sleep related problems. As per WHO definitions*, 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity', and please remember that sleep is important component for establishing a proper mental, physical and emotional well-being of an individual.

(*Basic documents: 46th edition, World Health Organisation, 2007)

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