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Health Science

SLEEP QUALITY AMONG DOCTORS WORKING IN PRIVATE SECTOR

KEY WORDS:

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ABSTRACT

Objective: Medical profession is traditionally known for long stressful working hours, which can be associated with a poor quality of sleep and daytime sleepiness. However, few studies have focused on this theme among doctors working in private sector in India. Our objective was to investigate sleep quality and daytime sleepiness among doctors working in private sector.

Methods: This cross-sectional observational study involved 23 doctors working in private sector. The Pittsburgh Sleep Quality Index (PSQI) and the Epworth Sleepiness Scale (ESS) were used to measure the quality of sleep and excessive daytime sleepiness, respectively.

Results: Among the 23 doctors working in private sector, 34.8% had poor sleep quality (PSQI > 5) and 34.8% had EDS. Poor sleep was associated with Physical activity at night (P = 0.04) and with long periods lying down without sleep (P = 0.05).

Conclusion: Doctors working in private sector frequently have poor sleep quality and EDS. Considering that sleep disorders can affect quality of life, predispose to metabolic syndrome, and reduce work efficiency, health education programs regarding sleep hygiene should be emphasized in private hospital settings, to increase the awareness of the importance of healthy sleep.

INTRODUCTION:

Good quality sleep is a prerequisite for healthy functioning of human mind and body. Sleep problems are prevalent in the global population. Sleep problems are of growing concern to global public health because poor sleep is associated with impairments in motivation, emotion, and cognitive functioning as well as increased risk for serious medical conditions such as diabetes, cardiovascular diseases and all-cause mortality, even when the symptoms are below the threshold for clinical sleep disorders.[1]

Occupations associated with higher stress levels or with night or alternating shifts such as doctors and nurses are found to be associated with an increased risk for sleep disorders.[2,3] Poor quality sleep and excessive morning sleepiness affect both doctors and the patients under their care in the form of prescription errors, errors in clinical judgements, communication pattern and empathy.[4]

Indian healthcare is at a critical juncture, as it focuses on pertinent issues of consumerism, cost effectiveness and quality. The private hospitals are increasing in numbers in India vastly due to a number of factors including growing deficits of public sector hospitals and an increasing middle-income class, providing the required healthcare services to India's growing population. The total health expenditure in India is estimated to be about 6% of GDP, of which private health care expenditure is 75%. About 65% hospitals and 32% of hospital beds are in the private setting. At present 80% of 390000 qualified allopathic doctors registered with medical councils in India are working in the private sector.[5]

Doctors working in busy private hospital settings in particular are at a higher risk of having poor sleep quality due to a variety of factors such as long working hours, on call duties and telephonic consultation of the inpatients from home during odd hours. Several studies had found poor sleep quality and excessive morning sleepiness among junior physicians (House Officers), medical students and residents, but very few studies explored sleep quality among doctors working in private sector.[6,7,8] Though, around 80% of medical doctors are working in private setting in India, the sleep quality and daytime sleepiness among doctors working in private sector is not studied till date. Hence, the aim of our study is to investigate sleep quality and daytime sleepiness through validated questionnaires among doctors working in private setting in Southern part of India.

MATERIAL AND METHODS:

This cross sectional study was carried out in a tertiary care hospital in Calicut, Kerala. Purposive sampling technique was used. This study was approved by the Institutional Review Board of the hospital. After explaining the research medical doctors were invited to the study and informed consent was taken. If they agreed to participate in the study, they were asked to complete the questionnaire by themselves. The subjects were given two validated self-administered questionnaires, that is, Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS) along with a structured questionnaire to collect sociodemographic and professional informations. The structured questionnaire contained information on sex, marital status, children, post-graduation, details of chronic illnesses, details of any substance abuse and sleep hygiene habits.

Regarding sleep hygiene, the participants determined the frequency of the following habits: irregularity of sleep times, use of bedroom as a study or recreation place, use of television or computer before bed, physical activity at night, excessive nighttime eating, nighttime use of stimulant drinks, and stay- ing for long periods lying down without sleep. Each was classified into 2 categories: frequent and rare or occasional.

The PSQI consists of 24 questions. They are divided into 7 categories: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disorders, use of sleep medication, and daytime dysfunction. Each one is scored as follows: 0 (very good), 1 (good), 2 (poor), to 3 (very bad). The sum of scores varies between 0 and 21 and determines the PSQI. A score higher than 5 suggests a poor quality of sleep.[9]

The ESS scores from 0 to 3 the probability of falling asleep in 8 everyday situations. The sum of scores equal to or greater than 10 reflects EDS.[10] The data were analyzed using SPSS version 17 (SPSS Inc,Chicago).

RESULTS:

Table 1 shows the sociodemographic and professional characteristics of doctors working in private sector. Most of the studied sample were male (87%), married (95.7%) and having children (78.3%). Most of them had post graduation in various specialities except one, had average 8.64 years of experience in

clinical practice. The average working hours of the sample per day was 6.19 hours, the average number of patients seen in a day was around 45.74 and the average number of night duties was 4.26 per month.

Sleep Quality

Table 2 presents sleep patterns of doctors working in private sector. Among the 23 doctors, 8 of them (34.8%) had a poor quality of sleep, as per the PSQI. According to the ESS, 8 doctors (34.8%) had EDS. Table 3 displays scores of the 7 categories of the PSQI. Areas with relatively higher scores were daytime dysfunction (0.91), sleep disorders (0.91), and sleep duration (0.96).

Sleep Hygiene

Regarding sleep hygiene of the 23 doctors working in private sector, 43.5% did not have regular hours of sleep; 56.5% used the bedroom for study or recreation; 56.5% often used television or a computer before bedtime; only 8.7% routinely practiced physical activities in the evening; 26.1% ate excessively at night; 21.7% often ingested stimulant drinks in the evening; and 26.1% reported increased time lying in down in the absence of sleep (Table 4). Table 4 shows the relation between sleep hygiene and sleep quality. A poor sleep was associated with Physical activity at night (P = 0.04) and with long periods lying down without sleep (P = 0.05).

DISCUSSION

Ours was the first study evaluating sleep quality and daytime sleepiness specifically in doctors working in private sector in India. Our findings show that poor sleep quality and bad sleep hygiene is frequent in this population. Around one third of the of the doctors working in private sector had poor sleep quality and excessive daytime sleepiness. When compared to studies among medical students and residents, our study sample had better sleep quality, but similar excessive daytime sleepiness.[7,8] A recent study from Canada among psychiatry residents showed that 59.3% had a poor quality of sleep, as per the PSQI and 28.8% had EDS, as per ESS.[8] Previous studies done among medical students showed altered sleep pattern among 50.9% of the sample and EDS in 30.6% of the sample.[7] Another recent study among doctors working in a tertiary care hospital in Nigeria found all respondents to be poor sleepers with high rates of excessive daytime sleepiness.[11] Similar studies among nursing population working in hospital setting reported prevalence of poor quality sleepers between 41.3% to 61%.[3]

Our study showed that no one among the sample consulted a consultant for poor sleep quality though it was prevalent among one third of the sample. The association of poor sleep quality with various medical conditions such as diabetes, hypertension, obesity, chronic pain, infections, and other systemic diseases and cognitive performance is well known.[12] Moreover, insomnia is associated with poor academic and occupational performance, increased risk of accidents at work or driving and high public expenses and sleep deprivation is related to mortality by any cause.[13]This highlights the need for awareness about this problem among doctors working in private sector.

Unlike past studies, a majority of doctors working in private sector did not report use of any hypnotic medications. Past studies among residents and medical students showed a very high prevalence of hypnotic use.[14] The study among Canadian psychiatry residents showed that around 54.2% had used sleeping medications, and 70% practiced self-medication with benzodiazepines, zolpidem, and anti-depressants.[8] The attempt to avoid assuming the sick role, the easy access to drugs, and the pressure to perform at work, contribute to the high rates of self-medication.

Sleep hygiene refers to the lifestyle behaviors and environmental conditions that facilitate sleep and improve sleep quality.[15] Many studies have shown that the sleep hygiene behaviors disturb sleep and may be important causes of insomnia. According to the ICSD, inadequate sleep hygiene is defined as a sleep disorder because of daily lifestyle activities that are inconsistent with the maintenance of good sleep quality. Knowledge on sleep hygiene does not necessarily translate into practice. A study evaluating sleep hygiene awareness and sleep hygiene practice found only a weak association between knowledge and practice.[16] The greatest sleep hygiene problem, in population studies, was irregular sleep schedules.[15] We found a similar finding among our study population also. Regular exercise is an important and commonly recommended for sleep hygiene, but exercise should be avoided close to bed time. Based on the current findings, 91.3% of the doctors did not have a regular exercise program during the evening.[17]

The tendency to doze during daytime was experienced by around one third of the study sample. Though only very low percentage of the sample was involved in night duties or ran shift duties, which are associated with EDS, the high prevalence of EDS is of great concern because poor sleep has been associated with risk of physical injury, the risk of injury from needle sticks or lacerations, the risk of prescription error, motor vehicle collision due to falling asleep while driving. This could be due to on call duties disturbing sleep pattern or telephonic consultation of inpatients during odd hours which are common in the hospital studied. For e.g..investigation results of inpatients used to be informed to the consultants even during odd hours if it is significant, disturbing their sleep pattern. Moreover, EDS has been shown to be linked to prolonged work hours.[18]Most of the respondents in our study worked more than 40 hours in a week. However, beyond the regular hours devoted to clinical work, some activities such as preparing lectures, academic writing etc are conducted outside the official time of clinical work along with call duties and telephonic consultation extending working hours further.

Conclusion: Our study results found that poor sleep quality and bad sleep hygiene is frequent among doctors working in private sector. Health education programs regarding sleep hygiene should be emphasized in private hospital settings, to increase the awareness of the importance of healthy sleep.

Tables:

Table 1

Sociodemographic and professional characteristics of doctors working in private sector

Characteristic		n	%
Sex	Men	20	87
	Women	3	13
Marital status	Yes	22	95.7
	No	1	4.3
Children	Yes	18	78.3
	No	5	21.7
Postgraduation	Nil	3	13
	Obstetrics and Gynaecology	3	13
	Orthopaedics	4	17.4
	Critical Care	1	4.3
	Internal Medicine	3	13
	Surgery	1	4.3
	Neonatology	3	13
	Endocrinology	1	4.3
	Pulmonology	1	4.3
	ENT	2	8.7
	Nephrology	1	4.3
History of any chronic illness	Yes	5	21.7
	No	18	78.3
History of any substance abuse	Yes	0	0
	No	23	100
	Mean	Standard Deviation	
Total years in practice	8.643	7.34	
Average hours of work/day	6.19	4.41	
Average number of patients/day	45.74	32.03	
Average number of surgeries / week	6.957	13.85	
Number of night duties/month	4.26	6.33	

TABLE 2

Sleep patterns of doctors working in private sector					
Sleep patterns	Minimum	Maximum	Mode	Mean	Standard Deviation
Time to sleep	10	1	11	n/a	n/a
Time to wake	5	10	6	n/a	n/a
Sleep duration, hours	5	8	6	n/a	n/a
Sleep latency, minutes	5	60	30	n/a	n/a
Pittsburgh Sleep Quality Index	1	9	5	4.83	2.41
Epworth Sleepiness Scale	1	15	6	7.83	3.73

TABLE 3

Scores of the Pittsburgh Sleep Quality Index categories among doctors working in private sector.		
Category	Mean	Standard deviation
Subjective sleep quality	0.74	0.54
Sleep latency	0.74	0.75
Sleep duration	0.96	0.71
Habitual sleep efficiency	0.48	0.85
Sleep disorders	0.91	0.29
Use of sleep medication	0.09	0.42
Daytime dysfunction	0.91	0.42
Total score	4.83	2.41

TABLE 4

Relation between sleep hygiene and sleep quality of doctors working in private sector.					
Habit		n (%)	Good sleep quality	Poor sleep quality	p
Irregularity of sleep times	Frequent	10 (43.5)	5	5	0.18
	Rare or occasional	13 (56.5)	10	3	
Use of bedroom as a study or recreation place	Frequent	13 (56.5)	8	5	0.67
	Rare or occasional	10 (43.5)	7	3	
Use of television or computer before bedtime	Frequent	13 (56.5)	8	5	0.73
	Rare or occasional	10 (43.5)	6	3	
Physical activity at night	Frequent	2 (8.7)	0	2	0.04
	Rare or occasional	21 (91.3)	15	6	
Overeating at night	Frequent	6 (26.1)	3	3	0.36
	Rare or occasional	17 (73.9)	12	5	
Use of stimulant drinks in evening	Frequent	5 (21.7)	3	2	0.66
	Rare or occasional	17 (73.9)	12	5	
Lying down for long periods without sleep	Frequent	6 (26.1)	2	4	0.05
	Rare or occasional	17 (73.9)	13	4	

Statistically significant values ($P < 0.05$).

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