SLEEP QUALITY ASSESSMENT AMONG MEDICAL PROFESSIONALS

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Abstract:
Sleep is an active process, essential for our health and wellbeing. It helps in memory reinforcement, thermoregulation, immune system activation, hormone secretion etc. Along with diet and exercise, sleep is one of the three pillars of health. Despite knowing everything about the benefits of a good sleep, doctors themselves are often sleep deprived. Extended working hours, interrupted sleep, and shift work are integral parts of our medical profession. The need for 24-hour patient care result in prolonged working hours and these long, erratic working hours lead to acute and chronic sleep deprivation and poor sleep quality, resulting in numerous adverse consequences. Impairments may occur in several domains, including attention, cognition, motor skills, and mood. Doctors performance, professionalism, safety, and wellbeing are affected by sleep deprivation, causing potentially adverse implications on patient care. Studies have shown adverse health consequences, motor vehicle accidents, serious medical errors to occur in association with sleep deprivation. A Descriptive study was done in Rajiv Gandhi Government General Hospital to find out the Quality of sleep among Medical Professionals using a standard questionnaire (Pittsburgh sleep quality index) among various cadres of Medical Profession(total of 100 doctors evaluated, 25 each from four cadres physicians, surgeons, non-clinical doctors, super speciality postgraduates). The Sleep quality was assessed under six categories-durantion, disturbance, latency, day dysfunction, sleep efficiency medication needed. Analysis of the data shows that the medical professionals have a significant poor quality of sleep. Over all 54 of the doctors have poor quality sleep, among them surgeons occupy a higher percentage (64) although the sleep efficiency and latency of surgeons being good compared to others. 64 of the Non-clinical doctors have good quality sleep. Clinicians have a poor quality sleep than non-clinicians. Day time efficiency is significantly low among poor sleepers. The sleep quality should have to be improved among doctors.

Keyword: Quality of sleep, medical professionals, clinicians, sleep efficiency
INTRODUCTION:
Sleep is a periodic reversible physiological state of loss of consciousness from which a person can be aroused by adequate sensory stimuli and which is necessary for the recoupment and wellbeing of the individuals. Sleep requirement for an average adult is approximately 7.5 to 8 hours regardless of environment or cultural differences. Adults who sleep less than 4 hours or more than 9 hours a night were found to have more chances of death from coronary artery disease, cancer or stroke. Sleep extension beyond the average hours can cause exhaustion and irritability. Modern society seems to be chronically sleep deprived. Sleep deprivation causes impaired work performance, immune suppression, impaired glucose tolerance, alter thermoregulation etc. We doctors, advice life style modifications like good sleeping habits, brisk walk, healthy eating habits etc, but how far we are executing this is highly questionable.

AIM:
To find out the quality of sleep among medical professionals

Materials & Methods
Type of study: A Descriptive study was done using a standard questionnaire (Pittsburgh sleep quality index). Total of 100 doctors working in RajivGhandi Government General Hospital, Chennai were included in the study, 25 physicians, 25 surgeons, 25 super speciality postgraduates, 25 non-clinical doctors. Informed consent was obtained and strict confidentiality was maintained.

Pittsburgh Sleep Quality index
Is a standard questionnaire-annexure which assess the sleep quality in the previous month. It contains 19 self rated questionnaire assessing 7 components of sleep

<table>
<thead>
<tr>
<th>Component</th>
<th>Min Score</th>
<th>Max score</th>
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<tbody>
<tr>
<td>Duration</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Latency</td>
<td>0</td>
<td>3</td>
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<td>3</td>
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<td>Sleep Efficiency</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Day time dysfunction</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Subjective sleep Quality</td>
<td>0</td>
<td>3</td>
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<tr>
<td>Sleep Medications used</td>
<td>0</td>
<td>3</td>
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PSQI = DURAT + DISTB + LATEN + DAYDYS + HSE + SLPQUAL + MEDS
Minimum Score = 0 (better); Maximum Score = 21 (worse) Interpretation: TOTAL < 5 associated with good sleep quality TOTAL > 5 associated with poor sleep quality (The Questionnaire used is enclosed in annexure)

RESULTS Age distribution:
<30 30-40 40-50 50-58 Physicians -5 15 5 Surgeons -4 16 5 Non-clinical -5 12 8 Post graduates 4 16 5 Total 4 30 48 18
The predominant age group included in the study are between 40 to 50 years (48%) the next age group is between 30 to 40 years (30%).4 of the 25 superspeciality post graduates were below 30 years. The maximum age limit included in the study is 58 years.
68 of the doctors are males and 32 of them are females, most of the females belong to the non-clinical group.

**DURATION OF SLEEP:**
If the duration of sleep is more than 7hrs the score is zero, if it is between 6hrs to 7hrs the score is 1, and the score is 2 if the duration is between 5 to 6 hours, and if less than 5 hours the score is 3. The Study showed 64% of the surgeons sleep for only 5 to 6 hours a day whereas only a few non-clinicians (20%) come under this category. 64% of non-clinicians have adequate duration of sleep for about 6 to 7 hours and even 16% of them sleep for more than 7 hours in a day.

The sleep latency of surgeons were mostly within 15 minutes, next come the postgraduates. The sleep latency of physicians and non-clinicians were slightly prolonged, most of them sleep after a latency of 30 to 60 min.

Sleep disturbance is more for the non-clinicians and physicians. Although the duration of sleep is less for surgeons, they have a sound sleep during their sleeping time.
Sleep efficiency is better for the surgeons, as they have shorter sleep latency, and they have no disturbance during their sleep. The sleep efficiency is poor for the non-clinical people.

5) DAYTIME DYSFUNCTION

Daytime dysfunction is more for the surgeons and postgraduates, non-clinicians do not have daytime dysfunction, that affect their quality of work during the day time.

6) SUBJECTIVE SLEEP QUALITY

64% of the non-clinicians have very good subjective sleep quality and only 46% of the surgeons feel their sleep quality being good. 28% of the surgeons have very poor sleeping quality and only 6% of the non-clinicians feel their sleep quality being poor.

7) SLEEP MEDICATIONS USED

In the study group one surgeon and one postgraduate used sleep medication in the previous month.

OVERALL SLEEP QUALITY PSQI (Pittsburgh Sleep Quality Index) = DURAT + DISTB + LATEN + DAYDYS + HSE + SLPQUAL + MEDS

Minimum Score = 0 (better);
Maximum Score = 21 (worse)

TOTAL < 5 associated with good sleep quality
TOTAL > 5 associated with poor sleep quality

GOOD QUALITY SLEEP (46%)
POOR QUALITY SLEEP (54%)

68% of the non-clinicians have good sleep quality and only 36% of the surgeons have good sleep quality. 64% of the surgeons and 60% of the postgraduates have poor sleep quality. Only 32% of the non-clinicians have poor sleep quality.
DISCUSSION:
Lot of emphasize has been given to the sleep problems in patients but less attention has been focused on the effect of sleep deprivation among the doctors. A recent Japanese study showed that, lack of adequate sleep (less than six hours) in the doctors during the preceding night can result in higher rates of surgical complications. That study also showed sleep deprived residents (22%) were more likely to commit medical errors. In our study around 72% of the surgeons and 56% of residents sleep less than 6 hours a day, indicating they are prone for errors due to their sleep deprivation. The normal sleep latency is 15 -20 minutes. Around 88% of the surgeons and 80% of the residents in our study have normal sleep latency. Only 44% of the non-clinicians sleep within 20 minutes. The sleep efficiency is comparatively better for the surgeons (64%) and residents (48%) as they have shorter sleep latency and less sleep disturbance when compared to the non-clinicians (32%). The daytime dysfunction is more for the surgeons (56%) and residents (48%) when compared to the non-clinicians (16%). The consequences of sleep deprivation are real and serious as evidenced by increased error rates in intensive care units and impaired performance, time taken to perform surgery, high rates of motor vehicle accidents etc.4,5

In our study, we see overall 54% of the doctors have poor quality sleep. Our current working schedule contributes to much of this problem which is clearly shown by the surgeons (64%) having poor sleep quality followed by the postgraduates (60%). Although surgeons have a short sleep latency & good sleep efficiency, their day time dysfunction is more and duration of sleep is less contributing much to their poor sleep quality. Similar to the surgeons, the residents have long working hours, normal sleep latency, reduced duration of sleep which makes their quality of sleep poor. Non clinicians who have a fixed time working pattern have adequate sleep & good quality of sleep (68%).
A similar sleep study done among medical professionals showed 44% of the doctors have poor quality sleep and 70% of doctors need at least 7 hours sleep to function at their best, 43% of them noted their current working schedule did not allow for adequate sleep and 21.8% reported not feeling refreshed upon awakening due to inadequate sleep. Our study showed more than 50% of the clinicians, sleep only for less than 6 hours a day and more than 50% of the surgeons & post-graduates have day time dysfunction due to inadequate sleep. Sleep deprivation is an issue that need to be seriously addressed. we need to establish standards for maximum work and minimum uninterrupted sleep to ensure patient safety.

CONCLUSION:
The study clearly shows the quality of sleep is poor among the medical professionals with the surgeons and the residents are more affected than the physicians & non-clinicians. The current working schedule contributes to the poor sleep quality and we need to standardize our timings for a maximum efficient work and a good quality sleep.

REFERENCES:


ANNEXURE:

**Pittsburgh Sleep Quality Index (PSQI)**

1. During the past month, what time have you usually gone to bed at night? **BED TIME _____**

**SLEEP LATENCY**

2. During the past month, how long (in minutes) has it usually taken you to fall asleep each night? **NUMBEROF MINUTES _____**
3. During the past month, what time have you usually gotten up in the morning? GETTING UP TIME ___________

4. During the past month, how many hours of actual sleep did you get at night? (This may be different than the number of hours you spent in bed)

HOURS OF SLEEP PER NIGHT __________.

5. During the past month, how often have you had trouble sleeping because you . . .
   a) Cannot get to sleep within 30 minutes Not during past month____ Less than Once a week____ once or twice a week__________Three or more times a week____
   b) Wake up in the middle of the night or early morning Not during :past month,..... Less than Once a week ..........Once or twice a week_________ Three or more times a week____
   c) Have to get up to use the bathroom Not during the Less than Once or twice Three or more:past month____
   d) Cannot breathe comfortably Not during the Less than Once or twice Three or more:past month____
   e) Cough or snore loudly Not during the Less than Once or twice Three or more:past month____
   f) Feel too cold Not during the Less than Once or twice Three or more:past month____ once a week____ a week____ times a week____
   g) Feel too hot Not during the Less than Once or twice Three or more:past month____
   h) Had bad dreams Not during the Less than Once or twice Three or more:past month____
   i) Have pain Not during the Less than Once or twice Three or more:past month____
   j) Other reason(s), please describe__________________________

SUBJECTIVE SLEEP QUALITY

6. During the past month, how would you rate your sleep quality overall? Very good ___________Fairly good ___________Fairly bad ___________Very bad

TAKING SLEEPING PILLS

7. During the past month, how often have you taken medicine to help you sleep (prescribed or “over the counter”)? Not during past month____ the Less than once a week____
   Once or twice a week____ Three or more times a week____

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University Journal of Medicine and Medical Sciences
DAY TIME DYSFUNCTION

8. During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?
   No........ Less than once a week____ Once or twice a week.............. Three or more times a week____

9. During the past month, how much of a problem has it been for you
to keep up enough enthusiasm to get things done? No problem at all __________ Only a very slight problem __________ Somewhat of a problem ____ A very big problem

10. Do you have a bed partner or room mate? No bed partner or room mate __________ Partner/room mate in other room __________ Partner in same room, but not same bed __________ Partner in same bed
    If you have a room mate or bed partner, ask him/her how often in the past month you have had . . . a) Loud snoring Not during the Less than Once or twice Three or more past month_____ once a week____ a week____ times a week____ b) Long pauses between breaths while asleep Not during the Less than Once or twice Three or more past month_____ once a week____ a week____ times a week____ c) Legs twitching or jerking while you sleep Not during the Less than Once or twice Three or more past month_____ once a week____ a week____ times a week____ .d) Episodes of disorientation or confusion during sleep Not during the Less than Once or twice Three or more past month_____ once a week____ a week____ times a week____ e) Other restlessness while you sleep; please describe________________________
    Not during the Less than Once or twice Three or more past month_____ once a week____ a week____ times a week____