

# Behavior, Attitude and Knowledge of Sleep Medicine among Resident Doctors in University Hospitals of Central India: A Questionnaire Based Study

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*Indian J Sleep Med 2008; 2.4, 139-144*

## Abstract

**Purpose:** Due to lack of awareness and knowledge among the physicians sleep disorders are under diagnosed causing high morbidity. We aimed to assess the behavior, attitude and knowledge of sleep medicine among resident doctors.

**Methods:** Questionnaire based study: Med Sleep Survey questionnaires were distributed among 300 resident and intern doctors of University Hospital of Central India. Out of which 278 agreed to respond. Questionnaire consist of 10 questions assessing behavior and attitude each, also 30 questions assessing basic sleep knowledge. Data analysis was done by using Statistical Software Analyze it. Software Ltd. Version 2.03, 2007. The distribution of score for attitude and knowledge, t-test and one-way ANOVA were applied to mean values. Spearman's correlation was applied for determination of correlation between attitude & knowledge.

**Results:** Out of 300 subjects, 278 responded. 57.55% of respondents have 6 to 7.5 hours of sleep. 37.77% needed more than three cups of caffeinated products per day to maintain alertness (5.03% needed more than 6 cups per day). 9.35% often get trouble to sleep or stay asleep. 15.11% often fall asleep in class while studying. 6.12% get drowsy while driving. 58.63% agreed having interest in sleep medicine. 62.94% agreed to have sleep medicine in curriculum. 53.23% agreed to enroll in sleep medicine courses if available. Mean and mode scores of basic sleep knowledge were  $12.51 \pm 5.08$  and 15 respectively. There was no correlation between attitude & knowledge among respondents (Resident-  $P=0.0858$ ; Interns-  $P=0.8032$ ; Interns plus residents -  $P = 0.3175$ )

**Conclusion:** Sleep behavior was accepted by majority of responders. Others were having responses suggestive of sleep disorders. Most of the responders have positive attitude to learn. The level of basic sleep knowledge implies that there is intense need to include sleep medicine in curriculum.

**Keywords:** Attitudes, Behavior, Knowledge, Sleep Medicine, Doctors, Sleep Survey.

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## Introduction

One third of our life we spend sleeping. Ever wondered why? Why is sleep so important that we spend more than 30% of our life sleeping? Sleep relaxes a person after a day's work. Maximum

rate of metabolism occurs during sleep. Hence sleep has fascinated scientists around the globe. Millions of Indians are plagued by sleep disorders. It's a serious public health risk that too many doctors ignore.

Sleep problems are common across all age groups, although the prevalence of particular kinds of problems may vary with factors, such as age, lifestyle, shift work, co morbid disease states, etc. 73% of the individuals surveyed complained of a nocturnal sleep problem and 9% had severe insomnia <sup>[1]</sup>. The prevalence of severe insomnia ranged from 4% to 22% <sup>[2]</sup>. Patients attending general practice clinics have a high prevalence of insomnia, and physicians must be on the lookout for these sleep disturbances so that they can offer appropriate treatment <sup>[3]</sup>.

The importance of adequate knowledge of insomnia cannot be overemphasized so that clinicians can efficiently manage this common health problem in primary care <sup>[4]</sup>. Sleep disorders are interdisciplinary and involve a number of specialties such as respiratory medicine, neurology, psychiatry and otolaryngology <sup>[5]</sup>. 87.5% of the patients with loud snoring suffer from sleep disordered breathing, of which 72% complain of excessive daytime sleepiness. Yet, sleep medicine is not given emphasis in medical school education <sup>[6]</sup>. The most American pulmonologists actively involved in practice of sleep medicine had only informal training and their performance when dealing with non-pulmonary sleep disorders was unsatisfactory <sup>[7]</sup>.

Medical students and postgraduate trainees in specialties such as pulmonology, psychiatry, neurology have sleep-related education in their curriculum but are not given due importance both by teachers and students.

This study was undertaken to assess the behavior, attitude and knowledge of Sleep Medicine among interns and resident doctors in medical university hospitals of central India.

## Methods

A questionnaire-based study was carried out among interns and resident doctors in various medical university hospitals (viz. Govt. Medical College and Hospital, Indira Gandhi Medical College and Hospital & Lata Mangeshkar Medical College and Hospital) in Nagpur City. The doctors were informed that their participation in the survey was purely voluntary, minimum

demographical data would be collected, the information collected would remain confidential and if the data was published; there would be no identification of individual respondent. Out of 300 doctors subjected to questionnaire 278 doctors (92.33%) responded.

The MED Sleep Survey, which is an inventory to assess behavior, attitudes and knowledge about sleep, was used for the survey. [This survey was developed as a collaborative project by several academic institutions such as the University of Kentucky Medical Centre, UMDNJ – Robert Wood Johnson Medical School and the University of North Carolina at Chapel Hill, USA.] permission to use the survey form was sought from Dr. Raymond Rosen. The MED Sleep Survey is available on the Internet <sup>[8]</sup>. The instrument was designed as a standardized assessment measure for use in medical education in sleep.

The survey consists of three parts: Part I has 10 questions on sleep behavior of the respondents; Part II has ten questions on sleep attitudes and Part III has thirty questions on basic sleep knowledge. The first part has 10 questions that pertain to the sleep/ wake behavior of the students. Each statement has five responses that quantify the respondent's behavior on a minimum to maximum scale. The second part measures the students' attitudes towards sleep medicine (Likert type, minimum score 10, maximum score 50). A five-point scale was used to rank the answers: 5 – strongly agree, 4 – agree, 3 – uncertain, 2 – disagree and 1 – strongly disagrees. The third part of the questionnaire consist of 30 statements to measure the students' knowledge in sleep medicine. There were three answers for each statement: "True", "False" and "I don't know". Overall knowledge in sleep medicine was determined by adding up the correct answers. The highest possible score in Part III was 30 points. Data on doctor's sex, age and educational level was also collected.

## Data Analysis

The data was analyzed by using statistical software-Analyze-it Software Ltd, version 2.03, 2007. Distribution of scores among the groups of interns and residents was normal for attitude and knowledge, therefore t-test and one-way ANOVA were applied to the mean values. To determine correlation between attitude and knowledge of sleep medicine Spearman's correlation was used. Significance was measured at the level of  $p = 0.05$ .

**Results**

A total of 278 doctors responded to MED Sleep questionnaire based survey. There were 155 (56%) male and 123 (44%) female respondents. Mean age was 24 years. Out of 278 respondents 183 were interns and 95 were resident doctors.

In terms of sleep behavior, 160 (57.55%) respondents had sleeping duration of 6 to 7.5 hours. 91 (34.74%) respondents had to take 1-2 cups/day of caffeinated products (i.e. coffee, tea, chocolate, soda) which help to maintain alertness during class study and driving, while 5.03% required more than 6 cups/day. 9.35% of the subjects had trouble getting to sleep or staying asleep. 15.11% used to fall asleep in class or while studying and 6.12% used to get drowsy while driving. 18% (50/278) had sleeping duration of more than 7.5 hours while 68 respondents (24.46%) had sleep duration of less than 6 hrs.

The scores obtained for attitude among the interns and resident doctors were having normal frequency distribution (Fig. 1)

As far as sleep attitude was concerned, noticeably 62.94% respondents agreed to the view that sleep disorders should be included in medical school curriculum.

The scores obtained for knowledge among the interns and resident doctors were having normal frequency distribution (Fig. 2)

The basic sleep knowledge was 12.51±5.08 and 15 for interns & resident doctors respectively.

Table 1 shows sleep attitude and knowledge scores of interns Vs resident doctors. The total knowledge score (mean ± SD) of resident doctors was 14.6 ± 4.5 and of interns was 11.5 ± 5.0, the total knowledge score was statistically significant (P<0.0001).

**Table 1:** Sleep Attitude and knowledge scores of interns versus Resident Doctors

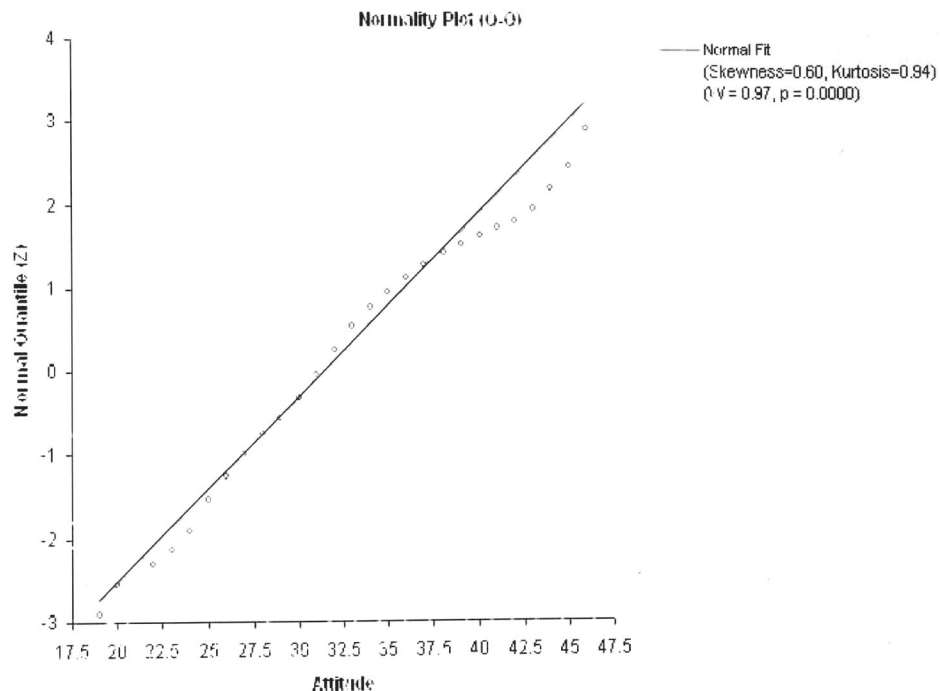
Sr. No.	No of Responders	Total Attitude Score Mean ± SD	Total Knowledge Score Mean ± SD
1.	Interns (183)	31.2 ± 4.1	11.5 ± 5.0
2.	Residents (95)	31.6 ± 5.2	14.6 ± 4.5

\* Attitude of Interns Vs Resident P = 0.5235

\* Knowledge of Interns Vs Resident P <0.001

Figure 3 & 4 depict correlation between attitude & knowledge of residents & interns.

Figure 5 shows correlation between attitude & knowledge of interns plus residents.



**Fig 1:** Attitude of Interns plus Residents Normality Graph

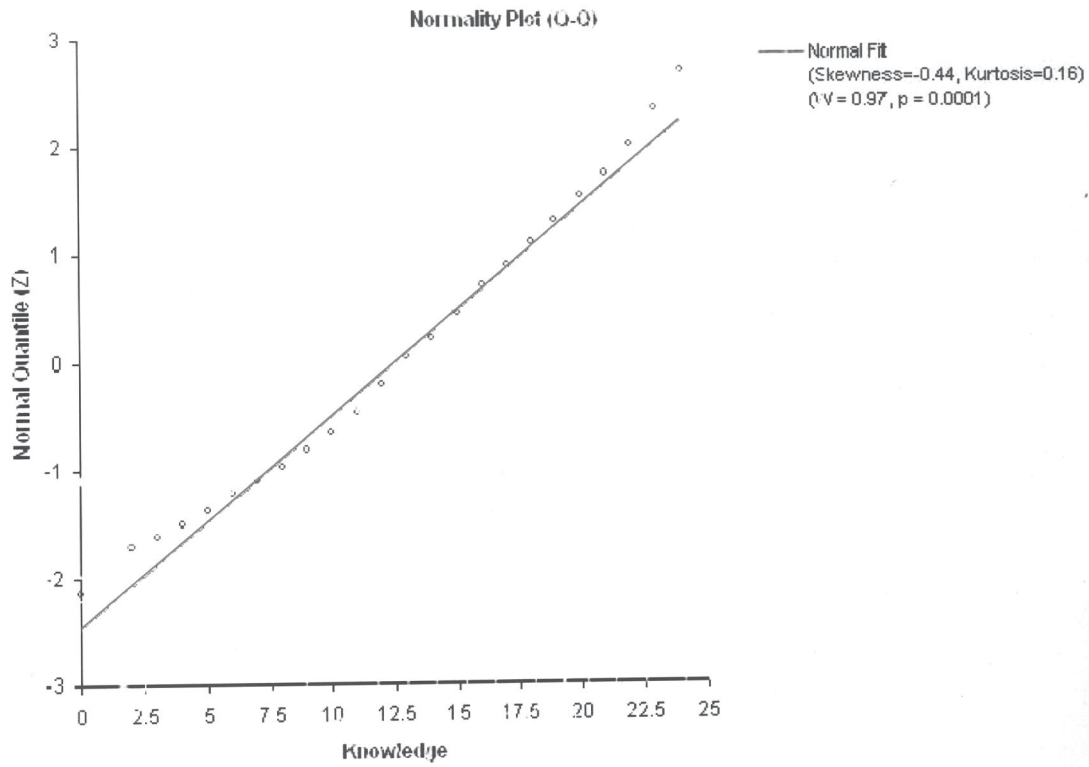
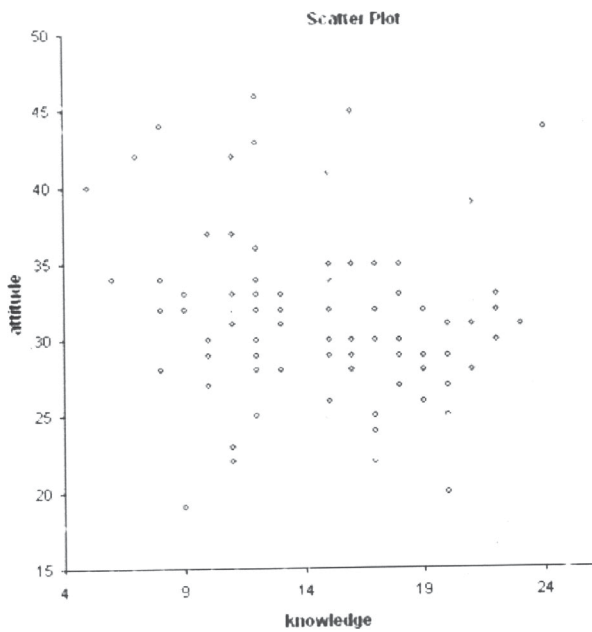
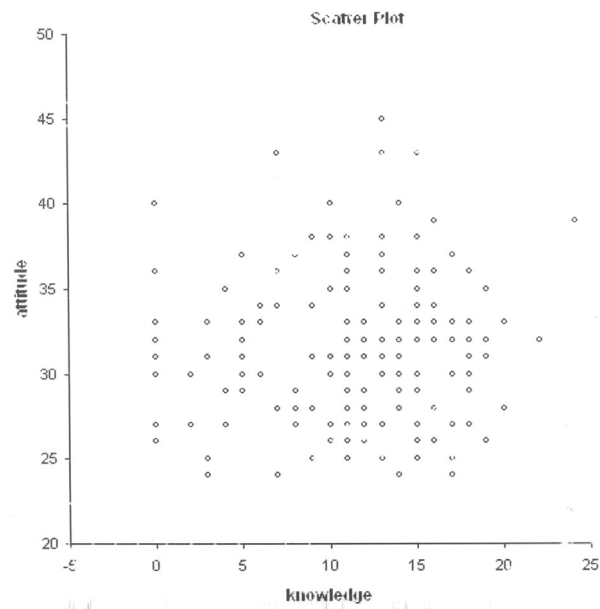


Fig 2: Knowledge of Interns plus Residents Normality Graph



Spearman's correlation test  
P = 0.0858

Fig 3: Correlation between attitude & knowledge of Residents



Spearman's correlation test  
P = 0.8032

Fig 4: Correlation between attitude & knowledge of Interns

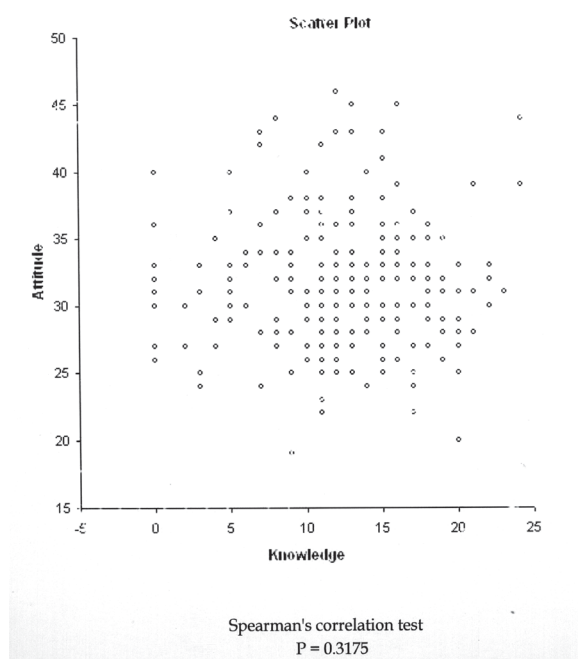


Fig 5: Correlation between attitude & knowledge of interns plus Residents

## Discussion

The significant number of subjects had either sleep deprivation or hyper somnolence (24% and 18% respectively). These results are similar to those reported by Printemps C et al<sup>[9]</sup>. Coren S in 1994 observed that only 36% of respondents had normal sleep. It can be inferred from results that significant proportion of respondents (24%) had symptoms suggestive of sleep disorders like insomnia, hyper somnolence. 6.12% respondents have very severe symptoms (viz. getting drowsy while driving), which may endanger their own and other life. These respondents need evaluation for presence of sleep disorders.

The sleep attitude scores reflected an average score of 31.3 out of a maximum possible 50, which is a positive attitude towards sleep medicine. There was a significant difference between the attitude of interns and residents with average attitude scores being 31.2 and 31.6 respectively for the interns and residents.

The analysis of sleep knowledge of the respondents revealed that the average score of the respondents was 12.6, which was unacceptable (less than 50%). Only 57 interns (i.e. 31.15% of interns) and 50 residents (i.e. 52.63% of residents) scored more than 50%. There was no correlation either individually or an overall basis

between attitude and knowledge among respondents (residents –  $p = 0.0858$ ; inters –  $p = 0.8032$ , interns plus residents  $p=0.3175$ ). The better knowledge scores of residents may be attributed due to more exposure to medical literature.

The reasons for poor knowledge in spite of positive attitude need to be assessed with detailed analysis of respondents.

The present curriculum of various universities in the region and other part of Indian subcontinent does not include lecture series and hours of sleep medicine. Also Sleep Medicine knowledge is not examined in the graduate and postgraduate teaching program separately. There is no post graduate diploma course or fellowship available in India for those aspirants who are having positive attitude and inclination to make career in the field of sleep medicine. Therefore, it may be presumed that doctors are not giving much importance to sleep medicine, which may be the important reason for having below average knowledge of sleep medicine. Similar observation reported by G. Sivaganam et al, 2004<sup>[10]</sup>; R Mahendran et al, 2004<sup>[11]</sup> & Zmka Kovacic et al, 2002<sup>[12]</sup>.

## Conclusion

Sleep behavior of significant respondents is not acceptable, may be affecting their intellectual and physical performance, which in turn would endanger the lives of patients.

The respondents had an overall positive attitude towards sleep medicine, which did not correlate with the sleep knowledge. So sleep hygiene should be taught and practiced compulsorily in Medical universities. So serious measures need to be taken to improve the sleep knowledge among the doctors, who do not have enough exposure towards sleep medicine either in their curriculum or practice. This implies that the existing system of medical education needs to be revised to give this very important branch of sleep medicine its due importance for the benefit of both health care giver and the patients. It is recommended to start postgraduate certificate, diploma or degree courses or fellowships to have dedicated and devoted sleep physicians, academicians and administrators to develop the field of sleep medicine in the community to alleviate the sufferings of the sizeable population of patients around the globe.

## Acknowledgement

The authors thank Dr. Anil Sontakke, Lecturer, Department of Chest Medicine, Dr. Vinay Maheshwar, Medical Officer, Govt. Medical College, and Dr. Santosh Wakode, Lecturer, Dept. of Physiology, Govt. Medical College, Nagpur for their kind support.

A special thanks goes to all resident doctors and interns who participated in the study.

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