

PREVALENCE OF SNORING AND INSUFFICIENT SLEEP IN THE POPULATION OF JHARKHAND

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ABSTRACT

A cross sectional survey was conducted using Modified Global Sleep Assessment Questionnaire (MGSAQ) to investigate the prevalence of insomnia and snoring in the general populations of Jharkhand (3264 participants). The mean age of the total population was 35.3 years. Approximately every one out three participants (36.4 %) is reportedly suffering from inadequate sleep (insomnia). Almost 16 % people reported to have problems of snoring. In case of Insomnia male showed more incidences than females while in other sleep disorders like snoring the case is just reversed.

KEYWORDS : MGSAQ, Snoring, Insomnia, REM Sleep.

Sleep is essential for normal health and survival but very little is known about its function and mechanism in maintaining normal physiology (Ahmad et al., 2013). It is necessary to have the documentation of the sleep status of each state to evaluate the health status of the country. It is the population health that defines the growth of a state or a country as a whole. Several societies and associations had been formed towards combating the sleep related disorders throughout the world like European Sleep Research Society (ESRS), American sleep association (ASA), Japanese Sleep Research Society (JSRS), World Association of Sleep Medicine (WASM), British Sleep Society (BSS), Indian Society for Sleep Research (ISSR), Indian Sleep Disorder Association (ISDA) etc. There are survey reports of sleep related disorders from different states of India (2). Till date the status of sleep disorder in the population of Jharkhand remains unknown. The aim of this study was to document the prevalence of sleep disorder like snoring and insomnia in the population of Jharkhand.

MATERIALS AND METHODS

A MGSA (Modified Global Sleep Assessment) questionnaire based population survey was carried out to evaluate the prevalence of sleep disorder in Jharkhand. For better communication and proper feedback answer from the indigenous people, local people well known to them and conversant with the local languages were employed. Otherwise they deny to take part or to give answers to such scientific questions. This is the common problem with any tribal population of Jharkhand. The MGSAQ was translated into three languages (Hindi, Bengali and

Santhali) for better communication with the indigenous people. The questions were verbally communicated in their respective languages to those people who were unable to read the MGSAQ by their own. Informed consent was taken from each and every human participant through the following MGSA questionnaire.

Sample MGSAQ:

Global Sleep Assessment Questionnaire

Name
 Father name.....
 Address
 Village/colony..... Post.....
 P.S. Distt.
 State PIN no.....
 Phone No.....
 Date of birth.....Age.....Sex-Male/Female;
 Blood Group - A/B/AB/ O (+/-)
 Race/Category..... Marital Status-Married/
 Single/Widow/ Divorced/ Separated.
 Occupation..... Height Weight.....
 Date of study Education

Your habits - Tea/ Coffee/ Smoking/ Alcohol/ Tobacco.
 * Here's how to answer the questions using our number scale-

1= rarely or never; 2= Sometimes; 3= Often; 4= frequently
 5= Always.

1. Did you have difficulty falling asleep, staying sleep or did you feel poorly rested in the morning?
2. Did you fall asleep unintentionally? Did you have to fight to stay awake during the day?

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Table 1 : Number of Human (Male and Female) Subjects of Different Age Groups Taken for The Survey of Sleep and Related Disorders

Age Groups in Years	Male	Female	Total	Total
10-30	1410	1180	2590	3264
30-40	128	190	318	
40-50	82	62	144	
50-60	72	66	138	
60-70	56	18	74	

3. Did sleep difficulties or daytime sleepiness interfere with your daily activities?
4. Did work or other activities prevent you from getting enough sleep?
5. Did you snore loudly?
6. Did you hold your breath; have breathing pauses or stop breathing in your sleep?
7. Did you have restless or "crawling" feeling in your legs at night that went away if you moved your legs?
8. Did you have repeated rhythmic leg jerks or leg twitches during your sleep?
9. Did you have nightmares or did you scream, walk, punch or kick in your sleep?
10. Did the following things disturb you in your sleep: - Pain, Other physical symptoms, worries, medications or other (specify)?.....
11. Did you feel sad or anxious in the morning just after wake up?
12. What do you had in the morning?
13. Are you a vegetarian or non vegetarian, if non vegetarian how frequently do you have.....?
14. What time do you go to bed at night?(Time)
15. What time do you wake up in the morning? (Time)
16. Does your sleep schedule changes on Sunday /holiday? Ifyes How much.....?

I hereby give consent to take part in the research study as volunteer for the sake of scientific development of our community, our state and our country as a whole.

Signature

RESULTS

To find out the sleep and related disorders among the people of Jharkhand (including indigenou), we have surveyed 3264 human subjects. Numbers of male and female subjects of different age groups out of the total number of population are enlisted in the Table 1. The age group between 60 and 70 human subjects were less in number due to their apathy to participate in the survey. The ethnic distribution of the cross sectional survey participants are shown as pie chart in Figure 1 and shows that the percentage of SC human subject were less in number (9 %) as compared to the other caste groups (maximum being 38 % for ST). Based on their answers we have assessed the probable sleep status and related disorders.

Considering the answers of GSAQ gathered from the 3264 participants we have assessed different sleep and related disorders which are listed in the Table 2. We also have categorised the disorders differently for male and females (Hanly et al., 2014). The percentage of incidence of different disorders has been calculated for total number of subjects as well as in male and female differently and has been shown in the parenthesis in Table, 2. Approximately every one out three participants (36.39 %) is reportedly suffering from inadequate sleep. Almost 16 % people reported to have snoring problems. Sleep problem like Sleep apnoea have almost 10 % of incidence irrespective of sexes. There exists insignificant correlation (5.8%) between disorders like snoring and sleep apnoea, contrary to normal expectation (Krygev et al., 2011a). But there was striking difference in the habit of snoring in male and female subjects (females have shown 20.44 % where as males has 12.47 % incidence of snoring only) (Kryger et al., 2011).

Table 2 : Different Sleep Disorders in Male and Female Human Population of Jharkhand With The Percentage in The Parenthesis

Sl. No.	Sleep Disorders	No. of Male (%) Total No - 1748	No. of Female (%) Total No - 1516	No. Affected (%) Total No - 3264
1	Not enough sleep	676 (38.7)	512 (33.8)	1188 (36.4)
2	Snoring	218 (12.5)	310 (20.4)	528 (16.2)
3	Sleep Apnoea	172 (9.8)	130 (8.6)	302 (9.3)

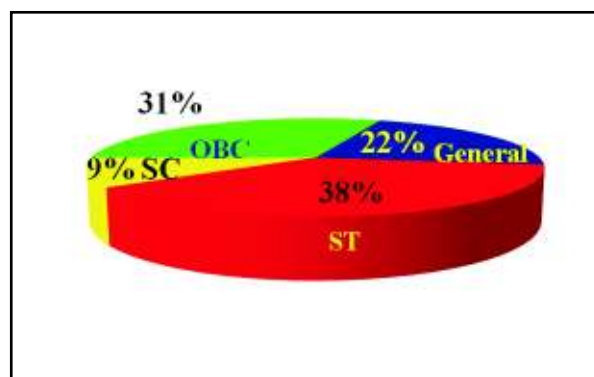


Figure 1 : Pie Chart Showing the Percentage of Caste Wise Distribution of Study Population of 3264 Individuals

DISCUSSION

Almost one third population of Jharkhand are facing problems of insufficient sleep that largely hamper the health status in general. As the inadequate sleep also has effects on normal activity and work load capacity, one might expect an inevitable decrement of productivity and growth of the state.

Still we could not statistically relate the high incidence of snoring with sleep related breathing disorder or Apnoea in Jharkhand as we generally found in other parts of India and abroad (Kryger et al., 2011b) (Panda et al., 2012).

Hike of incidence of snoring from 12% to 20% in female than male in this zone is not corroborated with the data we get normally. One of the probable explanations of such finding is that women usually do more physical work than males and are vulnerable for snoring problems in their comparatively deep sleep if we exclude the genetic factors in females involved in any way.

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REFERENCES

- Ahmad S., Gupta M., Gupta R., Dhyani M. 2013. Prevalence and correlates of insomnia and obstructive sleep apnoea in chronic kidney disease. *N Am J Med Sci.*, **5**(11): 641-6.
- Hanly P. J. and Ahmed S. B., 2014. Sleep apnoea and the kidney: is sleep apnoea a risk factor for chronic kidney disease? *Chest.*, **146**(4): 1114-22.

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- Kryger M. H., Roth T. and Dement W. C. 2011a. Principle and practice of sleep medicine. Elsevier (5th Eds.) Section 1, Chapter 1, pp 3-15.
- Kryger M. H., Roth T. and Dement W. C. 2011b. Principle and practice of sleep medicine. Elsevier (5th Eds.) Section 13, Chapter 100 pp 1140-1152.
- Panda S., Taly A. B., Sinha S., Gururaj G., Girish N. and Nagaraja D. 2012. Sleep-related disorders among a healthy population in South India. *Neurology India*, **60** (1): 68-74.