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FREQUENCY OF SNORING AND SYMPTOMS OF SLEEP APNEA AMONG PAKISTANI MEDICAL STUDENTS

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Background: Snoring and its related problem, sleep apnea, are very common. They occur in all ages and both sexes. Frequency varies in different communities therefore studies of other countries are invalid for Pakistan. The aim of this study is to assess the frequency of snoring and emergence of symptoms of sleep apnea among the affluent class young adult Pakistani population. **Methods:** Subjects were evaluated through a questionnaire. Questions pertained to quality of sleep, intensity and frequency of snoring and presence of symptoms such as waking up choking, morning headaches and morning dry mouth. Data were collected for age, sex, height and weight. Subjects were also asked if they took alcohol or any drugs. **Results:** A total of 111 subjects, M:F=2:3, age range between 18–23 years, responded to the survey. The frequency of snoring was 27% in males and 12% in females, with males admitting to snoring more night in the week than the females. 92% of both males and females graded their snoring as being softer than the sound of talking. 15% of the males and 38% of the females said they snored in every body position. Percentages of male and female snorers exhibiting symptoms of sleep apnea were very similar, with choking arousals at 6% and 5% respectively. **Conclusion:** This study was done on the young Pakistani population for the determination of frequency of snoring and the emergence of symptoms of sleep apnea. The results are similar to studies done on the adult population with snoring more common and louder among the males.

Key Words: snoring, sleep apnea, prevalence, Pakistan, young adults.

INTRODUCTION

First described in 1965, sleep apnea, the cessation of breathing during sleep, is a very common problem1 and one of the most disturbing exacerbations of snoring. The predisposing factors for obstructive sleep apnea are considered as being old, male and obese, but in actuality sleep apnea occurs in all age groups and both sexes2, it is seen to be more common in men but is considered as being underdiagnosed in women3. As much as 40% of people with this disability are not obese4 and it can strike anyone at any age, even children3. Young African Americans are considered to be at high risk for developing this disease3. It is thought that as much as 10 out of 100,000 people may suffer from this condition4. Yet because of the lack of awareness by the public and healthcare professional, the vast majority remains undiagnosed and therefore untreated, despite the fact that this serious disorder can have significant consequences such as, weight gain, impotency, headaches, hyperlipidemia, hypertension, and other cardiovascular problems5.

In a given night, the number of involuntary breathing pauses or ‘apneic events’ may be as high as 20 to 30 or more per hour6, leading to sleep insufficiency and memory disturbances. These breathing pauses are almost always accompanied by snoring between apnea episodes. Snoring is

considered the number one indication of any future or ongoing episodes of obstructive sleep apnea, although not everyone who snores has this condition.

Information about the frequency of obstructive sleep apnea among the Pakistani population is scarce, especially concerning the emergence of symptoms in young age. So the aim of this study is to assess the frequency of snoring and emergence of symptoms of sleep apnea among the affluent class young adult Pakistani population.

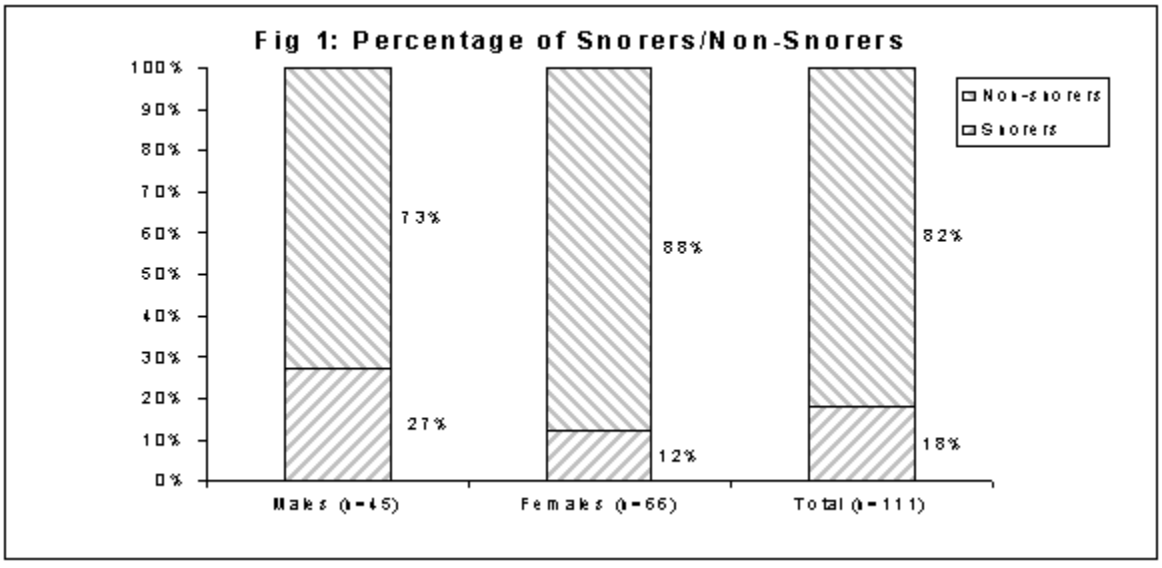
MATERIALS AND METHODS

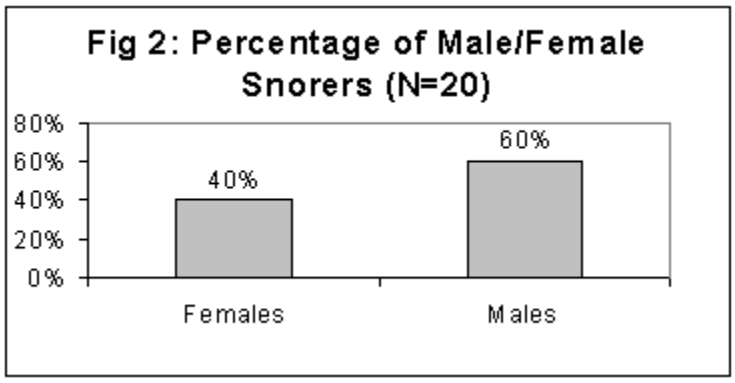
A survey was designed to analyze the sleep habits of the students of Shifa College of Medicine, Islamabad, Pakistan. Data were collected from March to April 2002. In order to carry out a comprehensive survey, a questionnaire was compiled consisting of a total of 50 questions divided into 7 blocks. Each block pertained to a specific area of sleep and its various disturbances. The answers were restricted to either YES or NO. Where answers required further qualification choices were provided from which the respondents were asked to choose the one which best described their situation.

A total of 120 questionnaires were distributed to the students of the first four years, with an explanation of the aims and objectives of the study. Responses were received from 111 students (n=111). The breakdown according to class was; First year (n=28), Second year (n=38), Third year (n=21), Fourth year (n=24). The male to female ratio was 2:3, with the age range between 18 and 23 years and the subjects included were of BMI in normal range.

RESULTS

Responses were analyzed on the bases of gender and it was seen that the percentage of males admitting to snoring (60%) was substantially more than the females (40%). (Fig-1 and 2).





Sixty-three percent of the females said they snored infrequently which was calculated to mean one night or less per week, the rest admitted to snoring 3 to 4 nights per week, none said they snored every night. Among the males 50% revealed they snored 3 to 4 nights per week, the remainder were divided among 33% who snored one night or less and 17% who admitted to snoring every night of the week. (Table-1).

Table-1: Frequency of nights with snoring

	Males (n=12)	Females (n=8)
1 Night or Less Per Week	33%	63%
3 to 4 Nights Per Week	50%	37%
Every Night	17%	0%

When asked to scale the noise of their snoring, 92% of both males and females believed their snoring was softer than the sound of talking (Table-2).

Table 2: Intensity of snoring compared with the sound of normal talking

	Softer	Loud As	Louder
Males (n=12)	92%	0%	8%
Females (n=8)	92%	8%	0%

When asked if they snored in every body position 15% of the males and 38% of the females answered yes.

Concerning symptoms associated with obstructive sleep apnea (Table-3) a great degree of similarity was seen in the responses of both males and females.

Table-3: Symptoms of Obstructive Sleep Apnea

	Males (n=12)	Females (n=8)

Wake up choking	6%	5%
Wake up with dry mouth	25%	26%
Wake up with a headache	10%	23%
Un-refreshing sleep	27%	27%
Without symptoms	32%	19%

Six percent of the males and 5% of the females admitted to waking up in the night with a sensation of choking. 25% and 26% respectively agreed they woke up in the morning with a very dry mouth and 27% of both men and women admitted they woke up in the morning as tired as when they went to bed at night. Aberration from this similarity was seen in the case of morning headaches where the females showed much greater results at 23% compared to the males at 10%.

All the students denied taking alcohol, sleeping tablets or any other medication with a sedative effect. The body mass index for all the respondents was well within the normal range.

DISCUSSION

Snoring is a common problem seen in about 20% of the adult population7. Much data are not available for the Pakistani population and results concerning the prevalence of snoring differ in different communities8,9,10. Therefore the results from Western studies cannot be used as guidelines when estimating prevalence and planning therapies for patients in this part of the world.

In our study snoring was reported at 18% with apneic episodes seen only in snorers, 5% in females and 6% in males. These findings are similar to those seen in Western studies8,11,12 and one local study13.

The objective of our study is to show the prevalence of snoring and emergence of sleep apnea related symptoms in the young local population. Not only is snoring a habitual annoyance but it is now considered a major public health concern1. Many disorders have been associated with sleep apnea such as nocturia and adult enuresis14,15. It has been involved in the onset of ischemic heart disease and coronary vascular disorders5.

Hypertension is the most documented disease secondary to sleep apnea16,17. It is found in half of all patients with sleep apnea and nearly a third of all patients with essential hypertension have sleep apnea18. This association is considered independent of obesity, sex and most important to our study, age16,19,20. Body position appears to have an important influence on the incidence and severity of sleep disordered breathing18. Both snoring and sleep apnea are usually worse while sleeping in the supine position18,21. Knowing the severity of the consequences of disordered breathing during sleep, screening for symptoms in younger age could be a tool for preventive care in the future. Awareness about the association between snoring and these serious diseases will lead to increased rate of diagnosis and more accurate prevalence studies.

In our study only a limited population was used with an age range on which not much data are available to compare results with. Of the 12 major prevalence studies on sleep apnea11 all evaluated sleep through questionnaires and poly-somnography, while we only used a questionnaire. The small sample size and lack of sleep evaluation through objective means may have lead to low

estimates of snoring and sleep apnea. More accurate results would be available if a larger study on a bigger population were used.

CONCLUSION

Results show that snoring is not uncommon and is more prevalent in males. The symptoms of sleep apnea such as waking up choking, morning dry mouth and unrefreshing sleep are present equally among both male and female snorers. More sophisticated studies need to be done among this age group and the larger population to gain an accurate picture of the frequency of snoring and sleep apnea in Pakistan.

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