



AWARENESS AND KNOWLEDGE OF OBSTRUCTIVE SLEEP APNEA AMONG THE MEHSANA POPULATION

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ABSTRACT

Obstructive sleep apnea is one of the most common sleep disorders and is an increasingly prevalent condition that remains largely undiagnosed. An observational crosssectional survey conducted in Orthodontic department of Narsinhbhai Patel Dental College using OSA knowledge containing 24 questions including knowledge. questionnaire consisting 24 questions was prepared and circulated to mehsana population across mehsana via google forms. 1000 pediatricians were approached via various social media and whatsapp groups to fill up the google forms. We got 612 complete responses to consider in the study. The level of knowledge regarding diagnosis and management of OSA in the Mehsana population is not optimal. Large number 80.1% were not aware about OSA and 4.7% were aware about risk factors related to OSA.

KEYWORDS : *Obstructive Sleep Apnea, general population*

INTRODUCTION

Obstructive sleep apnea (OSA) is a condition characterized by recurrent collapse of the upper airway during sleep, leading to repetitive episodes of desaturations and arousals. It is associated with a myriad of negative consequences, including neurocognitive problems such as excessive daytime sleepiness and depression, an increased risk of cardiovascular and metabolic diseases such as hypertension, stroke, diabetes and all-cause mortality. It is an increasingly common condition and there has been an alarming rise in the prevalence of OSA, with reported rates of moderate-to-severe OSA (defined as an apnea-hypopnea index (AHI) ≥ 15 events/h) of up to 50% in recent population-based studies. This is likely due to a combination of factors such as the obesity epidemic, an ageing population, improved technology leading to more sensitive sleep study sensors and scoring criteria of respiratory events that are less stringent as a result of updates. Despite the high prevalence rates of OSA, it has been reported that up to 90% of subjects in these population-based studies did not receive a prior physician diagnosis of sleep apnea. This suggests that there are large numbers of sleep apnea subjects that remain unrecognized and untreated in the community, therefore contributing to the enormous public health burden of OSA. Strategies to optimize diagnosis and treatment of OSA are dependent on public awareness of the disease.

Increased awareness of OSA (in particular, knowledge of risk factors and presenting symptoms) would mean that symptomatic subjects are more likely to seek attention from their healthcare providers. In that aspect, a recent study found that primary care physicians were ten times more likely to refer patients for an OSA evaluation if the patient actually inquired about that condition. Although it is widely believed that public awareness of OSA has increased steadily over the last three decades, we hypothesize that awareness and knowledge of OSA among the general population remains poor, contributing to the large proportion of undiagnosed OSA subjects in the community. To date, there has been no largescale survey examining the levels of awareness and knowledge of OSA among the general population. In this study, we conducted a telephone survey to assess current awareness, knowledge and attitudes towards OSA in the community. (1-7)

MATERIAL AND METHOD

A questionnaire consisting 24 questions was prepared and circulated to general population of mehsana via google forms. 1000 individuals were approached via various social media and whatsapp groups to fill up the google forms. We got 612 complete responses to consider in the study.

The survey form consisted 24 questions divided in 2 parts: The first part (10 questions) contained demographic characteristics of individual like gender, age, height, weight, neck size, etc. The second part (14 questions) examined basic knowledge about obstructive sleep apnea.

The informed consent was not taken for this cross-sectional study because voluntary nature of the study. The study was conducted between December 2020 and February 2021 (3 months).

We made a smeaury of data as means and standard deviations for continuous variables and percentages for categorical variables. Baseline demographic factors were compared between respondents and non-respondents. Comparisons between groups were carried out with the t-test and chi-square test. All statistical tests were significance ($P < 0.05$).

RESULT

Majority of the responses we got were from males (415, 67.8%), whereas 32.2% were females. 11.8% participants were of age group 18-30 years, 37.6% were of 31-50 years and 33.8% participants were of 51-60 years. Only 16.8% participants were of 60 years or above. 15.4% participants were of BMI less than 18.5, 45.6% participants were of BMI 18.5-25, 34.8% participants were of BMI 25-30 and only 4.2% participants were of BMI greater than 30. 55.7% participants have neck size more than 40 cm. 21.6% participant have habit of smoking cigarettes.

Of this population 20.3% people are found to be hypertensive, while 10.9% people have diabetes and 1.8% people are suffering through asthma. Out of 612 people, most people did not wake up in the middle of the sleep though 30.9% people were found to wake up less than 5 times at night and 13.4% people were found to wake up at night in the range of 5 to 15 times, while only 1.0% of all the 612 people categorized themselves into the range of 15-30 times.

Table – 1

Sex	
Male	415(67.8)
Female	197(32.2)
Age	
18-30 years	72(11.8)
31-50 years	230(37.6)
50-60 years	207(33.8)
>60 years	103(16.8)
BMI	
<18.5	94(15.4)
18.5 – 25	279(45.6)
25 – 30	213(34.8)
>30	26(4.2)
Neck size	
>40 cm	341(55.7)
Total sleep time	
<4 hrs	16(2.6)
4 - 6 hrs	96(15.7)
6 - 8 hrs	438(71.6)
>8 hrs	62(10.1)
Any Habit	
Smoking	132(21.6)
Alcohol	-
Any systemic diseases	
High bloodpressure	124(20.3)
Diabetes	067(10.9)
Asthma	011(1.8)
GERD	-
Depression	-
Other	-
How many time wake in night	
0	335(54.7)
<5	189(30.9)
5 – 15	082(13.4)
15 – 30	006(1.0)
>30	-

When this population group was questioned about OSA only 117 people out of 612 were aware about Obstructive sleep apnea and of this 117 people only 20 people that is only 4.7% people were aware about the risk factors of Obstructive sleep apnea.

Table – 2

Aware about OSA	
Yes	117(19.1)
No	495(80.9)
Aware about Risk factors	
Yes	29(4.7)
No	88(14.4)

This 117 people were further questioned about their sleeping habits and when they were asked: Do they snore during sleep or not? 103 people were found to snore during their sleeps while only 14 people that is 2.3% of 612 population didn't snore while sleeping. Also the people who snored while sleep, out of 103 people, 63 people's snore bothered people around them. They were further questioned whether or not did they feel tired/fatigued during daytime and of 117 people, only 32 people felt such way and rest 72 did not feel tiredness during daytime. They were also asked whether or not they fell asleep/nodded off while driving and of 117 people, there were 9 such people who responded with a yes.

Table – 3

Do you snore	
Yes	103(16.8)
No	014(2.3)
Snore loudly	
Yes	59(9.6)
No	44(7.2)

Your snore is	
Slightly louder than breathing	6(1.0)
As loud as talking	38(6.2)
Louder than talking	49(8.0)
Very loud	10(1.6)
How often do you snore	
Every day	63(10.3)
3-4 /week	25(4.1)
1-2/week	15(2.5)
1-2/month	-
Never	-
Bothering others	
Yes	63(10.1)
No	06(1.0)
Don't no	34(5.6)
Feel tired, fatigued, or sleepy during daytime?	
Yes	32(5.2)
No	71(11.6)
How often do you feel tired or fatigued after your sleep?	
Every day	07(1.1)
3-4 /week	26(4.2)
1-2/week	30(4.9)
1-2/month	15(2.5)
Never	48(7.8)
During your waking time, do you feel tired, fatigued, or not up to par?	
Every day	29(4.7)
3-4 /week	52(8.5)
1-2/week	14(2.3)
1-2/month	08(1.3)
Never	-
Nodding off or fallen asleep while driving a vehicle?	
Yes	09(1.5)
No	94(15.4)
How often does nodding off or falling asleep while driving a vehicle?	
Every day	
3-4 /week	
1-2/week	
1-2/month	003(0.5)
Never	100(16.3)
Stop breathing during your sleep?	
Yes	-
No	103(16.8)
Has anyone noticed that how many times do you quit breathing during your sleep?	
Every day	
3-4 /week	
1-2/week	
1-2/month	
Never	103(16.8)
Have high blood pressure?	
Yes	63(10.3)
No	30(4.9)
Don't no	10(1.6)
Being treated for high blood pressure?	
Yes	63(110.3)
No	40(6.5)

DISCUSSION

We found that there was low awareness and poor knowledge of OSA among the general population. About two in ten respondents were aware of OSA. In particular, knowledge of OSA was poor, with only 4.7% of respondents able to correctly list at least one risk factor of OSA. Sia et al. interviewed 1306 respondents in a population-based study conducted in Singapore to assess the awareness of OSA through telephone and internet surveys. They reported that 21.5% of the respondents had knowledge of the disease, with 14.5% of respondents able to list symptoms of OSA such as snoring or

choking during sleep. In this study, knowledge of OSA was poor, with only 5.9%, 12.1%, 11.5% and 8.4% of respondents able to correctly list at least one risk factor, symptom, health consequence and treatment option for OSA.⁽⁸⁾

In the literature, studies were carried out between medical faculty and dental faculty students and doctors in various fields on knowledge level of sleep disorders and OSA. But there are very few studies on the knowledge level of the people. In India, there are few studies among physicians, but there are minimal studies that measured the public's knowledge about it.

The strengths of our study are it is the study on the knowledge level of OSA among society. The present study is a data set furnishing information regarding the knowledge of obstructive sleep apnoea in patients in the Mehsana district of Gujarat. Despite the fact that noncommunicable diseases such as cardiovascular diseases, diabetes, and hypertension are on the rise in rural population and their implicated risk with OSA, the presence of OSA remains unexplored.

OSA has been implicated as a causal factor in atherogenesis leading to stroke and myocardial infarction. OSA has caused arrhythmias and sudden cardiac death. People suffering from OSA, find difficulty in concentrating and find themselves falling asleep at work, while watching TV or even when driving leading to accidents on the road or at workplaces. Other neurologic complications include memory problems, morning headaches and depression. Due to the nonspecific symptoms, a large proportion of OSA is not suspected and are left undiagnosed.

In addition to the fact check that the risk factors for sleep apnea are increasing in the general population, the diagnostic criteria for sleep apnea continue to evolve, which results in a shifting metric, making prevalence hard to estimate.

Our study demonstrates that the results indicate that there is lack of knowledge regarding screening, diagnostic aids, risk factors of OSA amongst the targeted population. Also our study highlights the fact that OSA is more common in men than women. This male predominance may be related to several factors including hormonal effects in the muscles of the upper airways, gender-based differences in the distribution of adipose tissue, variances in pharyngeal shape, size, and collapsibility, and differences in ventilation control.

The present study has been conducted among small sample size which can be a limitation and thus may not be generalizable. Therefore it is recommended that future studies need to be conducted on a large sample.

Limitation of this study is that it is a questionnaire type cross sectional study so responder bias is very common in these studies. Some responders may have answered the questions more favourably to appear more comprehensive in their examination pattern than what they actually do in their examination. This study reflects the attitude of the responders on a specific time and may differ in general. The nonresponders may have different opinions regarding the questions of the study. Another limitation of the study is recall bias because of the type of the study.

CONCLUSIONS

Most of the general population from the Mehsana district did not have the optimal knowledge about OSA. They were not aware about risk factors of OSA and they were not also aware about symptoms of OSA. This reflects the poor educational level regarding OSA. Therefore, it is crucial to focus more on spreading considerable knowledge toward sleep disorders

and specially OSA in the general population. Finally, it is hoped this could improve the outcomes of patients suffering from OSA.

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