Awareness regarding Obstructive Sleep Apnea among OPD Patients in a Private Hospital of Lalitpur

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Obstructive Sleep Apnea (OSA) is a type of sleep apnea that causes the upper airway to collapse, leading to a lack of oxygen, which leads to negative health effects. Adequate awareness among the patients is helpful in early diagnosis and prevention of complications. The objective of the study is to assess awareness regarding OSA among OPD patients in a private hospital in Lalitpur. A cross-sectional analytical study design was adopted among 94 medical OPD patients in a B&B Hospital, using a non-probability purposive sampling technique. A semi-structured research instrument was used to collect data using face-to-face interviews. Ethical approval was taken from B&B IRC. Data was analyzed using descriptive and inferential statistics. Out of 94 respondents, 37.2% were of age group <30 years, 69.1% were male, 58.5% were from Brahmin/Chettri ethnicity, 88.3% were Hindu, 70.2% were married, and 68.1% had educational status of higher than secondary level, 25.5% were doing government and private service. The study revealed that 72.3% of OPD patients were adequately aware, and none of the socio-demographic variables and disease-related variables were associated with the level of awareness regarding OSA. The majority of patients were adequately aware; however, less than one-fourth were inadequately aware. There was no association between socio-demographic and disease-related variables with the level of awareness regarding OSA. Awareness program regarding preventive measures of OSA can be conducted by the Hospital authority among OPD patients.

Keywords: awareness, obstructive sleep apnea, OPD patients.

Obstructive Sleep Apnea (OSA) is a condition characterized by frequent collapses of the upper airway while a person is asleep, which cause desaturations and awakenings. It has negative health effects such as excessive daytime sleepiness, metabolic and cardiovascular diseases like diabetes, heart failure, and hypertension, as well as mortality.[1]

The prevalence of OSA has been documented at 9% to 24% globally in the general population aged 30-60 years.[2,3] According to recent estimates, OSA affects over one billion people worldwide.[4] Obesity, age, sex, hypertension, menopause, smoking, and tonsillitis are risk factors of OSA.[5] The apnea hypopnea index (AHI), generated from polysomnography, indicates the average number of severe breathing disturbances per hour of sleep, is widely used to assess the severity of OSA.[6] CPAP is considered as gold standard treatment for patients with OSA.[7]

The findings of similar studies conducted among the OPD patients concluded that the level of awareness regarding OSA was inadequate. Despite the high prevalence of OSA, there is a huge awareness gap regarding risk, symptoms, and management of OSA.[8–10] Hence, the present study assesses awareness regarding Obstructive Sleep Apnea (OSA) among OPD patients in a private hospital of Lalitpur.

Materials & Methods

A cross-sectional analytical study design was adopted for the study. The study was conducted in Outpatient of B&B Hospital, Gwarko, Lalitpur.

The patients with any type of problems attending the medical OPD of B&B Hospital were the study population. A total of 94 respondents were included in the study. The sample size is calculated using Slovin's formula, considering an error of 10%, and a total population of 1500. For the 15-day data collection period, the total population was 1500, with a daily rate of 100 patients.

Before data collection, ethical approval was obtained from the IRC (Institutional Review Committee) of B&B Hospital (Ref: B&B IRC-23-36). Informed consent was taken from all the respondents. Privacy and confidentiality of the information were maintained throughout the study. Data was collected by using face-to-face interviews with conveniently selected patients. The study was conducted from April to May 2023.

A semi-structured questionnaire was used in this study. It was divided into three parts. Part 1 consisted of a questionnaire related to socio-demographic characteristics, i.e., age, sex, occupation, educational status, religion, and marital status, where a total of 8 questions were included. Part 2 consisted of disease-related questions, which

included a total of 5 questions. Part 3 consisted of multiple-choice and multiple-response questions related to awareness regarding OSA among OPD patients, where a total of 17 questions were used with a total score of 53. This part includes questions related to awareness regarding definition, causes, risk factors, clinical features, diagnosis, treatment, management, and complications of obstructive sleep apnea.

Each correct answer carried 1 score, and reverse scoring was done for negative responses in Multiple questions. Level of awareness was classified into 2 categories: adequate level of awareness (≥50% awareness score), and inadequate awareness (<50%). The questionnaire was pretested in a similar population among 10 patients attending the medical OPD in Sumeru City Hospital, Pulchowk, Lalitpur. All the data were over-viewed, checked, and verified for their completeness, consistency, and accuracy. Data analyses were performed using Statistical Package for the Social Sciences version 20.0. Data was analyzed using descriptive statistics like frequency, percentage, mean, range, and standard deviation. Inferential statistics, i.e., Pearson Chi Square, was used to find out the association of level of awareness with age, gender, ethnicity, religion, marital status, educational status, occupation, and Body Mass Index.

Results

Table 1 reveals that out of 94 respondents, less than half (37.2%) were from the age group <30 years, with a *mean ± SD of 36.60 ± 12.284*. The majority of the respondents (69.1%) were male, Hindus (88.3%), married (70.2%), with higher than secondary level education (68.1%). More than half were Brahmin/Chettri (58.4%) and had a BMI ≥25 (52.1%). A higher proportion (25.5%) were engaged in government and private service, 19.1% were in agriculture, 18.1% in business, and 30.9% in other fields, such as students, cabin crew, engineering, etc. Furthermore, 12.8% of respondents reported that they were diagnosed with OSA, and 7.4% had family history of OSA.

Figure 1 shows that among 94 respondents, most (72.3%) of OPD patients were adequately aware about OSA, and less than half (27.7%) were unaware. **Table 2** shows the total mean score obtained was 29.79±6.15. The highest mean score was observed in the etiology of OSA (6.36±1.88), followed by the introduction of OSA (6.03±1.92) and management of OSA (5.69±1.87). Comparatively lower mean scores were noted for complications (2.59±1.11) and treatment of OSA (2.07±0.91).

Table 1: Socio-demographic Variables of the Respondents (n=94)

Variables	**n (%)**
Age (in completed years)	
<30	35 (37.2)
≥30	59 (62.8)
Gender	
Male	65 (69.1)
Female	29 (30.9)
BMI	
<25	45 (47.9)
≥25	49 (52.1)
Ethnicity	
Brahmin/Chhetri	55 (58.5)
Others	39 (41.5)
Religion	
Hindu	83 (88.3)
Non-Hindu	11 (11.7)
Marital Status	
Married	66 (70.2)
Unmarried	28 (29.8)
Educational Status	
Higher than secondary	64 (68.1)
Lower than secondary	30 (31.9)
Occupation	
Government or private services	24 (25.5)
Others	70 (74.5)
Diagnosed with OSA	
Yes	12 (12.8)
No	82 (87.2)
Family History of OSA	
Yes	7 (7.4)
No	87 (92.6)

Table 2: Mean score of awareness regarding OSA (n=94)

Areas of Awareness	**Max score**	**Range**	**Mean±SD**
Introduction of OSA (1*5+6)	11	3-10	6.03±1.92
Etiology of OSA (1*5+1*5)	10	2-10	6.36±1.88
Symptoms of OSA (1*5+1)	6	1-6	3.23±1.11
Diagnosis of OSA (1*5+1)	6	1-6	3.23±1.11
Treatment of OSA (1*5)	5	1-5	2.07±0.91
Management of OSA (1*5+1*5)	10	2-10	5.69±1.87
Complications of OSA (1*5)	5	1-5	2.59±1.11

Table 3: Association between OSA awareness and sociodemographic variables (n=94)

Variables/Awareness levels	**Adequate**	**Inadequate**	χ^2	**p-value**
Age (in completed years)				
<30	24(68.6)	11(31.4)	0.396	0.529
≥30	44(74.6)	15(25.4)		
Gender				
Male	48(73.8)	17(26.2)	0.239	0.625
Female	20(69)	9(31)		
BMI				
<25	34 (75.5)	11 (24.4)	0.45	0.504
≥25	34 (69.4)	15 (30.6)		
Ethnicity				
Brahmin/Chhetri	43(78.2)	12(21.8)	2.261	0.133
Others	25(64.1)	14(35.9)		
Religion				
Hindu	62(74.7)	21(25.3)	1.972	0.16
Non-Hindu	6(54.5)	5(45.5)		
Marital Status				
Married	51(77.3)	15(22.7)	2.694	0.101
Unmarried	17(60.7)	11(39.3)		
Educational Status				
More than secondary	46(71.9)	18(28.1)	0.22	0.883
Less than secondary	22(73.3)	8(26.7)		
Occupation				
Government or private services	18(75)	6(25)	0.114	0.736
Others	50(71.4)	20(28.6)		

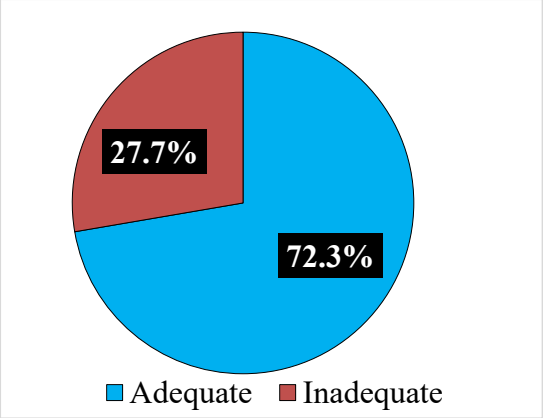

Figure 1: Level of Awareness regarding OSA among the Respondents (n=94)

Table 3 illustrates that there was no association of OSA awareness with age (p=0.53), gender (p=0.63), ethnicity (p=0.13), religion (p=0.16), marital status (p=0.10), educational status (p=0.88), and occupation (p=0.74).

Discussion

The present study revealed that most (72.3%) of OPD patients were adequately aware, and less than half (27.7%) were unaware of OSA. A similar study was carried out in Thailand on the knowledge and understanding of OSA among the population revealed that out of 281 cases, 228 (81.1%) were aware of OSA.[11] A similar study was conducted in Turkey among 1651 patients and patients' relatives. The result of the study 16.4% had low knowledge, which is consistent with the findings of the present study, where 27.7% were unaware. Similarly, 61% of the respondents had never heard of OSA, which is consistent with findings of my study, i.e., 78.7%.[12]

In contrast, research conducted in Saudi Arabia among 1000 participants showed that the overall knowledge level was low for 80.7% of the participants and good for 19.3% of the participants.[13] The result of the present study showed no significant association between age, gender, BMI, ethnicity, religion, marital status, educational status, and occupation. A study conducted in Saudi Arabia revealed no significant association between age, gender, educational status, and level of awareness.[14] A similar study conducted in Thailand supports the findings of the study, as there was no significant association between gender (p=0.52) and BMI (p=0.99) with level of awareness regarding OSA, and in contrast to the results, which showed a significant association between age (p=0.001) and level of awareness.[11]This study was limited to only one setting among a limited sample.

Conclusion

The study presents that the majority of the patients attending the OPD are adequately aware of OSA. None of the variables is significantly linked with the level of awareness regarding OSA. Information needs to be updated about OSA.

Conflict of interest: None

Source of research fund: None

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