



Research Paper

Assessment of Knowledge among Dental Students on Obstructive Sleep Apnea and Its Dental Management

Dr.R.Shakir Ahmed¹, Keerthana.S², Shilpa.K³

1. BDS, MDS, Prosthodontics, Crown & Bridge and Implantology, Sri Ramachandra Dental College and Hospital, Sri Ramachandra Institute of Higher Education and Research (DU), Chennai.
- 2, 3. Undergraduate Student-BDS, Sri Ramachandra Dental College and Hospital, Sri Ramachandra Institute of Higher Education and Research (DU), Chennai.

ABSTRACT

Introduction: Obstructive Sleep Apnea (OSA) a condition which presents with reduced or absent breathing during sleep. If untreated OSA can lead to other systemic complications. Management includes surgical correction or therapy using extra-oral or oral appliances. To treat mild or moderate obstructive sleep apnea, as well as snoring Oral appliances are frequently used. The objective of this study is to analyze the knowledge and attitude among undergraduate dental students of a dental institution regarding OSA and its management using oral appliances in the view create awareness. **Method:** A 15-point self-made questionnaire was created and circulated among undergraduate students of a dental institution. **Results:** The data obtained in form of answers to the survey was analyzed to assess the knowledge on Oral management of Obstructive Sleep Apnea under various domains. **Discussion:** Results obtained will be discussed under each domain to assess the knowledge and attitude among dental students on OSA and is compared with previous available literatures. The purpose of this research is to find the key areas of lack of knowledge on the topic and improve awareness on the condition among dental students with an ultimate aim to be beneficial to patients. **Conclusion:** This study provides an insight into the current knowledge and Interest to learn among students on OSA which enables the academicians to ensure that domains with reduced knowledge are given more significance in curriculum in form of lectures and seminars on Sleep Apnea with the inter-disciplinary collaboration.

KEY WORDS: Sleep Apnea, Obstructive Sleep Apnea, Knowledge on OSA.

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I. INTRODUCTION

Obstructive sleep apnea (OSA) is actually part of a “continuous” patho-physiological

Process in which the upper airway (UA), mainly the pharynx, shows a high resistance to air flows¹. Recurrent episodes of partial or complete obstruction of respiratory passages during sleep describe this condition. OSA has been linked to systemic disease when left untreated. Males are more affected than females in the adult population. Obesity, a narrowed airway, hypertension, alcohol, smoking, and diabetes are the primary predisposing factors in OSA. This condition has been recognized in the Western world as a public health burden, but there has been no community-based study performed to assess the prevalence of the condition in India².

To treat mild or moderate obstructive sleep apnea, as well as snoring Oral appliances such as Mandibular advancement splints (MAS), Mandibular repositioning appliances (MRA) OR Tongue retaining devices (TRD) are frequently used. Oral appliances reposition the Mandible forward to increase the volume of upper airway and decrease pharyngeal collapsibility. At velo-pharyngeal level the upper airway enlarges and anteriorly the tongue is displaced. The other treatments is continuous positive airway pressure (CPAP) machine. CPAP machine delivers enough air pressure to a mask to keep your upper airway passage open preventing snoring and sleep apnea. Bi-level positive airway pressure (BiPAP) machine. Surgical procedures are nasal surgery, pharyngeal procedure, tonsillectomy, multi-level surgery and uvulo-palato-pharyngoplasty. The objective of this study is to analyze their knowledge among undergraduate dental students on various aspects of OSA and also to assess their interest to learn more about the condition.

II. METHOD

A 15-point self-made questionnaire was created and circulated among undergraduate students of a dental institution.

III. RESULT

Total of 108 participants responded to the survey, the data was analyzed and tabulated as follows

Q.no	Questions	Yes		No		Not sure	
		NO.	%	NO.	%	NO.	%
1	Are you familiar with the condition called as sleep apnea?	91	84.3%	8	7.4%	9	8.3%
2	Have you come across a patient with condition of obstructive sleep apnea during your clinical postings?	8	7.4%	91	84.3%	9	8.3%
3	Do you know the oral symptoms and Oro-facial characteristics to identify a patient with OSA?	24	22.2%	53	49.1%	31	28.7%
4	Do you believe that children can also suffer from OSA?	73	67.6%	11	10.2%	24	22.2%
5	Is daytime sleepiness and snoring commonly associated with OSA?	48	44.4%	22	20.4%	38	35.2%
6	Are you aware about Polysomnography or sleep study?	41	38%	52	48.1%	15	13.9%

Table 1: Knowledge on Basics of Obstructive Sleep Apnea

7	Mark the options below, which according to you is a possible risk factor/s for sleep apnea	Obesity		Narrowed airways		Difficulty breathing through your nose – whether from an anatomical problem or nasal congestion		Large neck size	
		No.	%	No.	%	No.	%	No.	%
		62	57.4%	75	69.4%	87	80.6%	16	14.8%

Table 2: Knowledge on Basics of Obstructive Sleep Apnea

Q.no	Questions	Response			
		Male		Female	
8.	According to you which gender has the highest prevalence of Sleep Apnea?	No.	%	No.	%
		81	75%	27	25%

Table 3: Gender Prevalence

Q.no	Questions	Yes		No		Not sure	
		NO.	%	NO.	%	NO.	%
8.	Are you aware that untreated sleep apnea can lead to systemic illness	79	73.1%	15	13.9%	14	13%
9.	Are aware that sleep apnea can be managed surgically?	38	35.2%	48	44.4%	22	20.4%
10.	Do you know that sleep apnea can be treated or managed by using oral appliances?	53	49.1%	33	30.6%	22	20.4%
11	Are you aware of extra oral devices such as CPAP and BiPAP being used for management of OSA?	30	27.8%	56	51.9%	22	20.4%
12.	Are you familiar with oral appliances used in management of OSA such as Mandibular advancement splints (MAS) Mandibular advancement devices (MAD), Mandibular repositioning appliances (MRA), or Tongue retaining devices (TRD)?	31	28.7%	54	50%	23	21.3%

Table 4: Management of Obstructive Sleep Apnea

13.	According to your knowledge, which treatment modality will have better outcomes?	Surgical		Oral appliances		Extra oral appliances	
		No.	%	No.	%	No.	%
		44	40.7%	44	40.7%	20	18.7%

Table 5: Management of Obstructive Sleep Apnea

Q.no	Questions	Yes		No		Not sure	
		NO.	%	NO.	%	NO.	%
12	Are you interested to improve your knowledge on the condition of OSA and its management?	94	87%	5	4.6%	9	8.3%

Table 6: Interest to Learn

IV. DISCUSSION

This study was formulated to assess the knowledge on Obstructive Sleep Apnea among students of a Dental institution. Survey questionnaire was designed to have multiple segments as follows

Knowledge on Basics of Sleep Apnea (Table 1, 2, 3), Management of Sleep Apnea (Table 4, 5), Interest to Learn more about Sleep Apnea (Table 6).

84.3%(91) participants did not come across OSA patients in our study, value is greatly varied from a previous survey among clinicians by Ramesh et al³ valued at 55.8%, this data insists on the need to create greater awareness in identifying patients with the condition in a dental OP.

Participants lacking awareness on use of Polysomnography as a diagnostic aid for Sleep Apnea in our study was recorded at 48.1% is much lower compared to previous literature value at 61.9%⁴.

73.1% [79] of our participants responded that untreated Sleep Apnea can cause systematic illness, which is comparable to response of a previous study by Janhvi et al of 88%⁵.

Participants' responses shows that these is insufficient knowledge in the modes of management of OSA like surgery, Intra-oral appliances and extra-oral machines, which has to be notes and ways to improve has to be explored.

In this study 87% of participants are interested to know about OSA and management which was comparable to that of pervious literature data of 85% continuing dental education programmes and other interdisciplinary programmes with sleep pathologists and ENT departments⁶.

V. CONCLUSION

Our study aimed at assessing the awareness among young and budding dental graduates on OSA and its management with an emphasis on Oral appliance therapy, the results obtained indicated key areas of lack of knowledge which enables the academicians to ensure those areas are given more significance in curriculum in form of lectures and seminars on Sleep Apnea with the inter-disciplinary collaboration by including sleep pathologists and ENT specialists by which our goal of improved awareness among dental graduates on conditions like Sleep Apnea thereby enabling them to play an active in identifying and providing therapy to patients with the condition.

REFERENCE

- [1]. Marin-Oto et al, long term management of obstructive sleep apnea and its comorbidities, Multidisciplinary Respiratory Medicine 2019, 152-165.
- [2]. Surendra Kumar Sharma et al, chest 2006 July, prevalence and risk factors of obstructive sleep apnea syndrome in a population of Delhi, India.1-36(Pub med.gov).
- [3]. Ramesh L, Rajegowda N, Rai P. Knowledge, attitude and practice with regard to obstructive sleep apnoea - a survey among dental clinicians. J Evolution Med Dent Sci 2021;10(07):419-424, DOI: 10.14260/jemds/2021/93.
- [4]. Senturk H, Eryilmaz M A, Vatanssev H, Pekgor S. Evaluation of knowledge level related to obstructive sleep apnea syndrome. Niger J Clin Pract 2019;22:1722-7.
- [5]. Janhvi Manohar et al, Knowledge, awareness and practice among dental practitioners regarding oral appliances in treatment of obstructive sleep apnea, international journal of current research vol 9,issue,02,pp 46378-46381,february ,2017.
- [6]. Lingam Amara Swapna, Noora Fahad Alotaibi, Samah Abdulrahman Falatah, Meznah Saad Al Joaitheh, Pradeep Koppolu Knowledge of Obstructive Sleep Apnea among Dental Fraternity in Riyadh Open Access Maced J Med Sci. 2019 Aug 15; 7(15): 2508–2512. doi: 10.3889/oamjms.2019.654.

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Abbreviations: OSA – Obstructive Sleep Apnea