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Knowledge of obstructive sleep apnoea in physiotherapy students

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Abstract
Introduction: Obstructive sleep apnoea is by far the most common form of sleep disordered breathing and is defined by frequent episodes of obstructed breathing during sleep. Specifically, it is characterized by sleep-related decreases (hypopnoea) or pauses (apnoeas) in respiration. This is a serious problem because undiagnosed and untreated OSA has adverse cardiovascular, neurocognitive, and economic implications. Physiotherapy can also play an important role in management of obstructive sleep apnoea by reducing weight and by reducing muscular hypotonia of tongue muscles.
Aim: To assess awareness and knowledge of graduating physiotherapy students regarding OSA and also by this we can give information to physiotherapy students regarding this disease.
Methodology: The study population consisted of final-year physiotherapy students at Banarsidas Chandiwala Institute of physiotherapy, New Delhi. All the students are expected to go into practice as physiotherapists after successfully completing this examination. This is a survey based study on awareness of obstructive sleep apnoea. A cross sectional and random method was used to collect data from students about the knowledge of obstructive sleep apnoea in New Delhi. A specially designed questionnaire was used for data collection. Data of 50 students was collected and analyzed. Different questions were asked from the students to collect the data to conclude the awareness rate in BCIP students about obstructive sleep apnoea. Questions were asked on knowledge, signs and symptoms, diagnosis and treatment strategies of obstructive sleep apnoea.
Result: According to our survey on the awareness of obstructive sleep apnoea, the knowledge and awareness about obstructive sleep apnoea in BCIP students is found very less. Only 20% students are aware of the term obstructive sleep apnoea, only 4% students was there who knows about the sign and symptoms of obstructive sleep apnoea. There is only one student who knows about diagnosis and risk factors of obstructive sleep apnoea. No student has knowledge about treatment of obstructive sleep apnoea.
Conclusion: After our survey regarding the awareness of obstructive sleep apnoea, we find there is only negligible awareness in the physiotherapy students about this disease. Therefore we concluded that the knowledge of obstructive sleep apnoea in student is not enough to deal with an obstructive sleep apnoea patient in future.

Keywords: sleep apnoea, physiotherapy, hypopnoea

Introduction

Obstructive sleep apnoea is by far the most common form of sleep disordered breathing and is defined by frequent episodes of obstructed breathing during sleep. Specifically, it is characterized by sleep-related decreases (hypopnoea) or pauses (apnoeas) in respiration. An obstructive apnoea is defined as at least 10 seconds interruption of oronasal airflow corresponding to complete obstruction of the upper airways, despite continuous chest and abdominal movements, and associated with a decrease in oxygen saturation and/or arousals from sleep. An obstructive hypopnoea is defined as at least 10 seconds of partial obstruction of the upper airways, resulting in an at least 50% decrease in oronasal airflow [1].

Excessive daytime sleepiness (EDS), the most common complaint in patients with OSAHS, is known to be a predisposing factor for accidents, interpersonal problems and reduced productivity [2]. Symptoms other than EDS which greatly impact daytime functioning are neuropsychological symptoms such as irritability, difficulty concentrating, cognitive impairment, depressive symptoms, and other psychological disturbances [3].

Clinically OSA is suspected when a patient presents with both snoring and excessive daytime sleepiness (EDS). The diagnosis of OSA is confirmed when polysomnography recording determines an Apnea-Hypopnea- Index (AHI) of > 5 per hour of sleep. OSA can be categorised into three groups based on the number of events occurs per hour [1].

OSA is found to cause changes in sleep architecture, sleep of patients with OSA is fragmented and contains a lot of transitional sleep stages (stage 1) at the expense of REM sleep and particularly of slow wave sleep (stages 3 and 4) [1].

The prevalence of OSA is higher in men than in women. OSA is found in all age groups but its prevalence increases with age. In children, the prevalence of OSA is less well defined and has been estimated to be 2–8% [1]. In India, overall prevalence of OSA is found to be 9.3%. In males, it is found to be higher (13.6%) than in females (5.6%) [4].

Obstructive sleep apnoea (OSA) is a sleep disorder that remains under-diagnosed. Improved detection depends on increased health care professionals and public awareness.

This is a serious problem because undiagnosed and untreated OSA has adverse cardiovascular, neurocognitive, and

economic implications. Furthermore, there is a strong association between OSA and hypertension, stroke, arrhythmias, coronary artery diseases, and diabetes. Neurocognitive dysfunction caused by lack of restful sleep leads to excessive daytime somnolence and increased risk of accidents and depression [4]. Recognition and effective OSA treatment results in reduced health care utilization and improvement in patient outcomes. The knowledge of physiotherapy students regarding sleep apnoea may provide insight into their future ability to recognize patients with sleep apnoea and can also inform student education on this disease.

Aim

To assess awareness and knowledge of graduating physiotherapy students regarding OSA and also by this we can give information to physiotherapy students regarding this disease.

Hypothesis

We hypothesized that the knowledge of physiotherapy students about OSA is low.

Methodology

The study population consisted of final-year physiotherapy students at Banarsidas Chandiwala Institute of physiotherapy, New Delhi. All the students are expected to go into practice as physiotherapists after successfully completing this examination. This is a survey based study on awareness of obstructive sleep apnoea. A cross sectional and random method was used to collect data from students about the knowledge of obstructive sleep apnoea in the month of Apr-May, 2018 in New Delhi. A specially designed questionnaire was used for data collection. The questionnaire was validated by pilot study. Data of 50 students was collected and analyzed. Different questions were asked from the students to collect the data to conclude the awareness rate in BCIP students about obstructive sleep apnoea. Questions were asked on knowledge, signs and symptoms, diagnosis, risk factors and treatment strategies of obstructive sleep apnoea.

Questionnaire

The questionnaire administered to patient was validated by pilot study. This questionnaire consisted of-

1. What is obstructive sleep apnoea?
2. What are the signs and symptoms of obstructive sleep apnoea?
3. How can we diagnose obstructive sleep apnoea?
4. What are the risk factors of obstructive sleep apnoea?
5. What are the treatment options available for obstructive sleep apnoea?

Informed consent was obtained from all participants before questionnaire distribution. This questionnaire consists of 5 knowledge assessment questions.

Data Analysis

Data was analysed by using SPSS 20. Data is presented in form of tables and graphs.

Result

According to our survey on the awareness of obstructive sleep apnoea, the knowledge about awareness obstructive sleep apnoea in BCIP students is found very less. Only 10 out of 50 students have knowledge about the term obstructive sleep apnoea, only 2 students was there who knows about the sign and symptoms of obstructive sleep apnoea. There is only one student who knows about diagnosis and risk factors of obstructive sleep apnoea. No student has knowledge about treatment of obstructive sleep apnoea.

Table 1: Knowledge about obstructive sleep apnoea

Frequency		Percent	Valid percent	Cumulative percent
No	40	80.0	80.0	80.0
Yes	10	20.0	20.0	100.0
Total	50	100.0	100.0	

Table 2: Knowledge about signs and symptoms of obstructive sleep apnoea

Frequency		Percent	Valid percent	Cumulative percent
No	48	96.0	96.0	96.0
Yes	2	4.0	4.0	100.0
Total	50	100.0	100.0	

Table 3: Knowledge about diagnosis of obstructive sleep apnoea

Frequency		Percent	Valid percent	Cumulative percent
No	49	98.0	98.0	98.0
Yes	1	2.0	2.0	100.0
Total	50	100.0	100.0	

Table 4: Knowledge about risk factors of obstructive sleep apnoea

Frequency		Percent	Valid percent	Cumulative percent
No	49	98.0	98.0	98.0
Yes	1	2.0	2.0	100.0
Total	50	100.0	100.0	

Table 5: Knowledge about treatment of obstructive sleep apnoea

Frequency		Percent	Valid percent	Cumulative percent
No	00	00	00	00.0
Yes	100	100	100	100.0
Total				

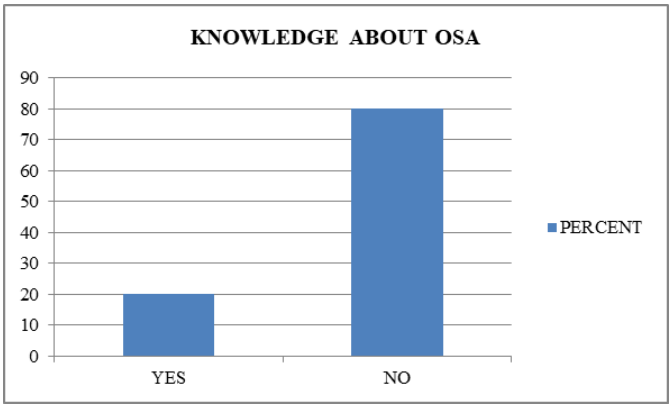

Fig 1: Knowledge about term "obstructive sleep apnoea"

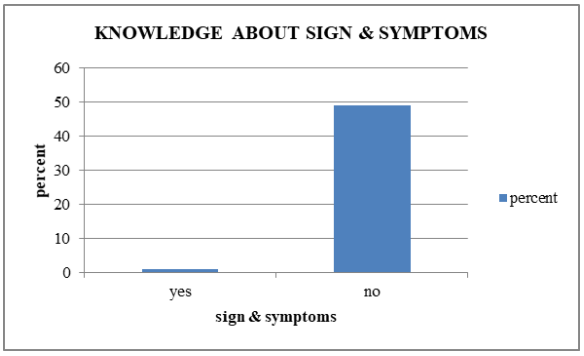

Fig 2: Knowledge about sign and symptoms of OSA

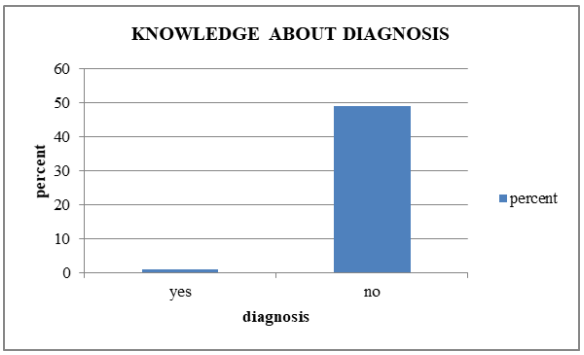

Fig 3: Knowledge about diagnosis of OSA

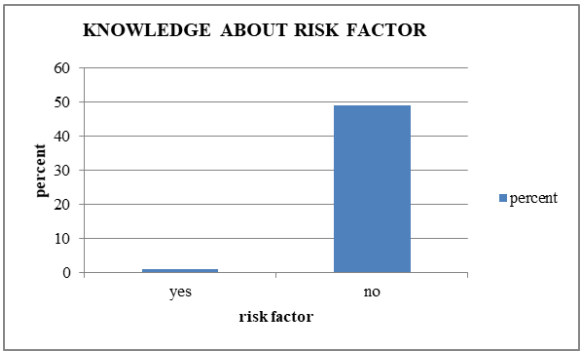

Fig 4: Knowledge about risk factors of OSA

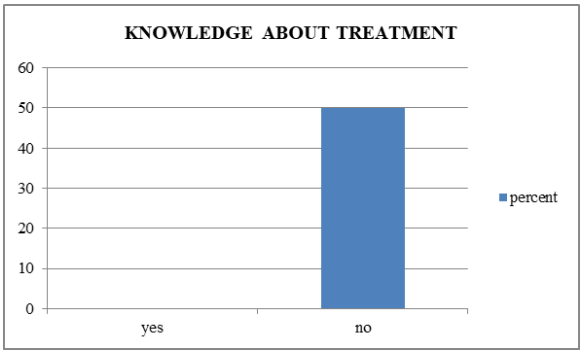

Fig 5: Knowledge about treatment of OSA

Discussion

In our survey on the awareness of obstructive sleep apnoea among the physiotherapy students, different questions were asked from 50 students. Five questions asked from subjects to check their knowledge level about the obstructive sleep apnoea. The first question was asked about the meaning of obstructive sleep apnoea. 10 out of 50 students were aware of the meaning of the obstructive sleep apnoea. The next question in our survey was asked about the signs and symptoms regarding this disease. This question was asked from 50 university students. 48 out of 50 college students have no information about the signs and symptoms of this disease. There was only a single university student in our survey of 50 students who have information regarding the risk factors of obstructive sleep apnoea. The next question in our survey was asked about the diagnosis of OSA. This question was asked from 50 university students. 49 out of 50 university students have no information about the diagnosis of this disease. The last question in our survey was asked about the treatment strategies of disease obstructive sleep apnoea. Not even a single student was able to tell about the treatment strategies used in case of OSA.

These types of awareness studies helpful or medical student about disease, symptoms, treatment and precaution etc [6].

As obstructive sleep apnoea occurs commonly in obese patients. Physiotherapy can help in treating OSA by prescribing weight reduction programme as weight reduction leads to improvements in severity of obstructive sleep apnoea. Studies have confirmed that exercise and dietary management appear as a non-invasive and effective strategy to counteract neurological and cognitive disorders [7].

A study was conducted by JB Dixon *et al* (2005) to examine the effect of weight loss on polysomnography changes in patients with obstructive sleep apnoea. They confirmed that weight loss provides major improvement or resolution of OSA and CPAP requirements. It also reduces daytime sleepiness, and improves the metabolic syndrome and life quality [8-9].

Conclusion

After our survey regarding the awareness of obstructive sleep apnoea, we find there is only negligible awareness in the physiotherapy students about this disease. Therefore we concluded that the knowledge of obstructive sleep apnoea in student is not enough to deal with a case of OSA in future and they must aware to OSA to treat effectively.

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