A CROSS SECTIONAL STUDY TO ASSESS THE PREVALENCE OF
OBSTRUCTIVE SLEEP APNEA AMONG PATIENTS WITH TYPE TWO
DIABETES MELLITUS

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RESEARCH ARTICLE

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ABSTRACT

Background:

Obstructive sleep apnea is a novel risk factor for Type 2 diabetes mellitus .The primary aim of this study was to assess the prevalence of obstructive sleep apnea among patients with type two diabetes mellitus.

Methodology

The study was conducted in OPD Medical Department in Chettinad Hospital and research Institute. A Cross sectional research design was used and enrolled 50 patients belongs to 30 to 60 years of age group diagnosed with type 2 diabetes mellitus were selected by using non probability convenient sampling technique. Data were collected regarding socio economic status and the risk of Obstructive sleep apnea was screened by using standard Berlin Questionnaire.

Results

The results showed 26(52%), 24 (48%) were male and female. Among these 28 (56%) were considered at high risk for OSA. There was no significant difference in gender proportion and in terms of age. The risk of OSA increased significantly with BMI above 30 .This study demonstrated a high prevalence of OSA among adult with diabetes mellitus. Our results suggested that the screening of OSA among patients with diabetes mellitus is an important role of the primary care givers.

Conclusion

Nurses working in various units need to assess for symptoms of sleep apnea because most patients are unaware of this symptom. Nurses could use a multidisciplinary approach, to identify the patients under risk and need to intervene quickly to prevent complications.

INTRODUCTION

Healthy sleep can be just as important as living a healthy lifestyle. 71% of people living with type 2 diabetes have diagnosed with obstructive sleep apnea. 83% of patients with type 2 diabetes suffer from unrecognized OSA and increasing severity of OSA is associated with worsening glucose control[1]. Obstructive sleep apnea is being recognized as an important cause of morbidity and mortality. Obstructive sleep apnea may contribute to the development of systemic hypertension, cardiovascular disease and abnormalities in glucose metabolism.OSA is an insidious and patients are often unaware of the symptoms[2]. Young *et al* estimated that the prevalence of OSA in adults belong to 30 to 69 years of age is approximately 17%.West *et al* reported that overall prevalence of OSA in diabetic men was 23% .A preliminary cross sectional study from a multi centric study revealed that, high prevalence of undiagnosed OSA in obese patients with type 2 diabetes above 75% of having moderate to severe OSA[3].

Identification and management of modifiable risk factors such as obesity, hypertension, and dyslipidemia are important to reduce complications associated with type 2 diabetes mellitus[4]. Sleep-related breathing disorders, including obstructive sleep apnea (OSA), may be another co morbidity that deserves attention in the overall approach to the care of patients with type 2 diabetes mellitus[5]. It is important to identify and treat persons with OSA because of its associated medical conditions,

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occupational hazards, and social consequences. Predisposing conditions associated with OSA include age, obesity, male sex, hypertension, and snoring[6].

MATERIALS AND METHODS

Research approach

Quantitative descriptive research approach

Research design

Cross sectional Research design

Setting of the Study

OPD Medical department, Chettinad hospital & research institute.

Population

Patients who were visited Medical OPD diagnosed with type two diabetes mellitus

Sample

The patients belong to 30 to 60 years of age group diagnosed with type two diabetes mellitus and who have met the inclusion criteria.

Sample size

50 Patients.

Sampling technique

Non Probability Convenient sampling technique.

Sampling criteria

Inclusion Criteria

The study includes Patients with type 2 diabetes mellitus
Patient with age group of 30-60 years irrespective of sex both male and female

Patient who can speak and read English, Tamil only
Who are willing to participate in the study

Exclusion criteria

The patients who have other co morbid condition

Description of Study Instruments

Structured questionnaires were developed based on the objectives of the study.

- **Part-A** - Demographic Performa
- **Part-B** - Berlin Questionnaire (BQ).It includes questions on snoring, witnessed apnoea, wake time sleepiness, and self-reported hypertension. It is classified into three categories.

Category 1 - includes five questions on snoring and witnessed apnoea.

Category 2 - includes three questions on wake time sleepiness and drowsiness

Category 3 - comprises self-reported diagnosis of high blood pressure and calculated body mass index (BMI).

Participants that satisfied the criteria in two or more categories were regarded as having high risk while the others were considered having low risk for obstructive sleep apnoea syndrome.

Data Collection Method

After obtaining ethical committee clearance from Chettinad Academy of Research and Education and written permission from Dean the study was conducted. The purpose of the study was informed to the patient and obtained consent from the patient. Confidentiality of the shared information was assured. It took 20 to 25 minutes to collect data for each sample. The patients were co-operated and participated willingly in the entire process of data collection.

RESULTS AND DISCUSSION

Participants Charecteristics

The collected data were entered in data sheet and analyzed using descriptive and inferential statistics. The distributions of the demographic data of the study participants are majority (40%) of patients are in the age group of 41 to 50 yrs. (52%), (48%) were male and female. 44% of patients undergone primary education, more than half the proportions (56%) had hypertension. Majority (46%) of patients had diabetes mellitus for five years and (20%) had for ten years. Majority (62%) of patients had family history of diabetes mellitus.

Risk of Obstructive Sleep Apnea

Of the 50 respondents, (60%) reported snoring. Of these 10% reported snored louder than talking and (44%) snorers said their snoring ever bothered others. 60% reported that they felt tired during waking time. Of these 30% said that they felt sleepy while driving a vehicle. 26% of the snored reported that the quitted breathing while sleep which was witnessed by others. On overall (56%) had high risk for obstructive sleep apnea, 4% with low risk and 40% of samples had no risk for obstructive sleep apnea. There was no significant difference in gender proportion and in terms of age. The risk of OSA increased significantly with BMI above 30.
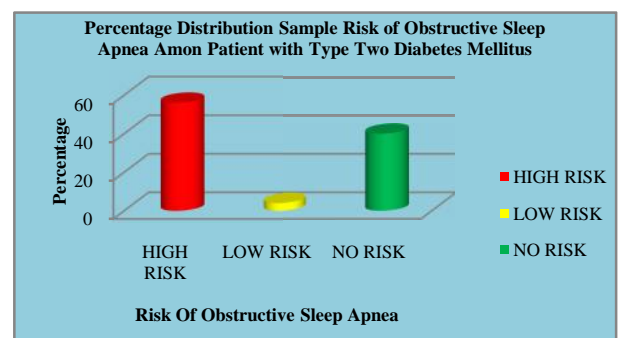
CONCLUSION

The results from this study revealed that prevalence of Obstructive Sleep Apnea is substantial among patients with diabetes mellitus and it is a noble factor to be considered to prevent complications. The magnitude of the prevalence of sleep apnea is enormous and many patients remain undiagnosed. Nurses working in various units need to assess for symptoms of sleep apnea because most patients are unaware of this symptom. Nurses could use a multidisciplinary approach, to identify the patients under risk and need to intervene quickly to prevent complications.

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