

A KAP Study on the Quality of Sleep and Complications of Patients with Type 2 Diabetes Mellitus

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Abstract:-

➤ *Back Ground:*

Type 2 Diabetes Mellitus(T2DM) is progressing rapidly over the course of the past few years more and with its possible association with obesity which is also on the rise , there are multiple complications affecting the health of the individual such as sleep which is of paramount important for our regular day to day functioning , so we need to assess and analyse these factors.

➤ *Aim & Objectives :*

1. To conduct a study and assess the sleep amongst patients suffering from type 2 diabetes mellitus
2. To assess any complications affecting sleep amongst these patients

➤ *Materials And Methods :*

A cross sectional study was conducted over a period of 3 months from March to May 2020 for 100 patients coming to a tertiary care hospital at Saveetha medical college and hospital ,Thandalam, Kanchipuram district ,Chennai ,Tamil Nadu .The analysis was done using excel sheet and spss software.

➤ *Results :*

In this study , a 100 people were assessed for their knowledge , attitude and practice towards the quality of sleep and complications of patients seen suffering from T2DM . Patients above the age of 40 were found to suffer from the complications of T2DM which was also affecting their sleep. The general attitude and practice of those patients from lower socioeconomic status was not satisfactory and had higher incidence of complications. Obesity plays a big role in development of TD2M and associated Obstructive sleep apnea and other complications.

➤ *Conclusion :*

To bring more awareness and guidance to the patients who are suffering from T2DM what symptoms to look out for and best practices to follow such as regular blood check ups and advice them the importance of sleep , proper exercise regularly and a good nutritious diet.

I. INTRODUCTION

The incidence of Type 2 Diabetes Mellitus(T2DM) is progressing rapidly over the course of the past few years more than Type 1 Diabetes Mellitus and according to the International Diabetes Federation , diabetes mellitus affects 285 million people worldwide , and statistically the number is expected to increase to 438 million by 2030(1). Type 2 diabetes mellitus is a disease which is acquired due to insulin resistance in the tissues which develops in an individual over time as they grow older and this causes inadequate insulin secretion by the pancreas to compensate which is also alters the metabolism of carbohydrates , proteins and fats and manifest as various metabolic abnormalities and long term complications which could possibly affect sleep. There is also a familial predisposition to developing T2DM.

Type 2 Diabetes mellitus can affect quality of sleep and also disturbed sleep can cause type 2 diabetes mellitus and has been found that there is increased incidence of poor quality of sleep in diabetic individuals than Non diabetic individuals(2). Assessment of sleep quality in a diabetic individual is extremely valuable.

A person suffering with T2DM can experience certain complications like Obstructive sleep apnea . Daytime sleepiness , restless leg syndrome , nocturia which all impact the quality of sleep Obesity in T2DM can cause many sleep disturbances such as Obstructive sleep apnea in particular ,nocturia , autonomic and peripheral neuropathy can be seen too. There is a higher risk of T2DM and Obesity in patients that sleep less than 6 hours on a regular basis.

II. MATERIALS AND METHODS

It was a crosssectional analysis of patients with Type 2 diabetes mellitus and the quality of sleep with complications conducted in Saveetha Medical college and hospital, Thandalam, Kanchipuram district, Tamilnadu from January 2019 to March 2020 . A sample size of around 100 patients were taken in for the study by simple random sampling method . Data was collected based on a set of questions framed in order to assess the knowledge , attitude and practice of the patients with regards to quality of sleep and complications associated with diabetes mellitus. For analysis

data was entered into an excel sheet and exported to SPSS for windows , version 16.0 for analysis.

III. RESULTS

The study was conducted among 100 patients out of which 53 of them are females and 47 of them are males over the range of 20-60 years of age.

71% of the patients above the age of 40 were suffering from type 2 diabetes mellitus. Among the patients 20% were illiterate , 34% studied till middle school , 36% studied till high school and only 10% of them graduated and got a degree.

The majority of patients who were affected were above the age of 40 years

Table: 1 Age variation amongst studied population

Age	Males	Females	Total [%]
20-30	3	1	4%
30-40	27	16	18%
40-50	39	14	42%
50-60	18	22	36%

Knowledge regarding diabetes and complications affecting quality of sleep:

The study showed that less than 50% of participants had poor knowledge about diabetes and its complications and only 13% had a good idea about the related complications , less than 10% knew there was a correlation between obesity and sleep quality.

Number of hours slept	Percentage (%)
More than 6 hours	67
Less than 6 hours	33

Questions asked to assess knowledge	Total [%] of positive responses
What is diabetes	47
How can diabetes be detected	64
Does lack of physical activity affect sleep	74
Can sleep duration affect blood glucose	22
Features of diabetes; Polyuria Recurrent infections Increased hunger	15

Attitude and practice regarding diabetes and complications affecting quality of sleep:

The general attitude and practices taken by patients of higher socioeconomic status who are suffering is positive outcome , as majority of the patients are taking good care of their diet and exercise in order to reduce weight and control

blood sugar levels. Less than 50% of patients checked their blood sugar levels regularly.

Obesity was found to be a factor associated with increased risk of loss of quality of sleep.

Questions asked to assess	Total [%] of positive responses
Do you check your sugar regularly	37
Do you eat fruits regularly	47
Do you consume green leafy vegetables in your diet	65
Do you think you are obese	54
Do you go for exercise everyday for atleast 30 minutes	36
Do you think you get adequate sleep	72
Does lack of physical activity affect sleep	55
Do you have trouble initiating sleep	26
Do you get up in the middle of the night due to breathlessness	39
Do you get up in the middle of the night to urinate frequently	64
Do you take drugs to sleep better	14

Poor quality of sleep was identified in 67% of patients that did not exercise regularly and suffered from increased frequency of micturition at night and waking up after suddenly feeling dyspnic

IV. DISCUSSION

In this study to assess the knowledge , attitude and practice and quality of sleep in patients with type 2 diabetes mellitus. The most common cause of type 2 diabetes mellitus is due to insulin resistance which I seen to affect the age groups above 40 the most. Patients suffering from type 2 diabetes mellitus can have other complications and complaints such as difficulty falling or staying asleep , excessive sleepiness during the day , a history of snoring and apneic episodes and a history of uncomfortable sensation in the legs which is relieved by movement(3). 54% of the patients that were studied believed they were obese and 74% of these individuals had difficulty sleeping at night. There is a proven association between obesity and Obstructive Sleep Apnea(OSA), obesity increases the risk for obstructive sleep apnea causing mechanical obstruction during sleep which causes a period of apnea for 20-30 seconds(4). Patients who has less than 6 hours of sleep were also found to have were found to have poor quality of sleep and also an increased risk to type 2 diabetes mellitus seen more commonly in women(5). Practices like regular exercise and eating healthy was found to be more common in males than females and good knowledge about this was present in the higher socioeconomic status(6). Low literacy

rate played an important role in the lack of knowledge of the patients with regards to diabetes and its complications(7)

V. CONCLUSION

The prevalence of type 2 diabetes mellitus has been increasing worldwide over the past few years. Poor lifestyle such as not having a nutritious diet and poor sleep patterns and less number of hours of sleep could be associated with obesity which further affects the sleep quality presenting as daytime sleepiness or obstructive sleep apnea and other complications of type 2 diabetes mellitus, this was seen majority in the patients above the age of 40 years. By taking into practice, regular health check ups, awareness by the government and teaching the patients about a proper lifestyle which would help reduce morbidity associated with such diseases. The quality of sleep in a person's life is of paramount importance and proper guidance must be given to people of all socioeconomic statuses and the doctor should pay more attention to the sleep of the individual as it can be affecting them.

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