

## “Prevalence of Poor Sleep Quality and its Predictors Among Type2 Diabetic Patients at Selected Rural Community, Kancheepuram Districts., Tamil Nadu, India”

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### Abstract

Sleep is a basic biological function which is essential for life.It is defined as unconsciousness from which the person can be aroused by sensory or other stimuli. Type 2 diabetic mellitus and sleep disturbance both are common health problems and detriments to each other.sleep disturbance are common individuals with diabetic<sup>2</sup>.Sleep disturbance may be due to the disease itself or due to physical complications of disease.Sleep quality and quantity are related to an augmented possibility of cardiovascular morbidity but then correspondingly with increased risk of mortality<sup>1</sup>

The objective of the study is to assess the prevalence of poor sleep quality ,to identify the predictors and to associate the predictors with poor sleep quality,to associate the poor sleep quality with selected demographic variables among type 2 diabetic patients The sample size is 100 samples at selected rural community.

The research design used in this study is non experimental ,descriptive research design. The results of the study show that regarding prevalence of poor sleep quality 43(43%) belongs to no difficult in sleep,38(38%) belongs to severe difficult in sleep and 19(19%) belongs to poor sleep quality which was assessed by standardize tool pittsburg sleep quality index

Regarding association of predictors of poor sleep quality with prevalence of poor sleep quality ,the results shows that predictors like types of treatment is associated with prevalence of poor sleep quality and other predictors like duration of diabetes, history of presence of complications, history of co mobility,BMI,glycemic control, unhealthy habits are not significant with prevalence of poor sleep quality .

Regarding the association of prevalence of poor sleep quality with selected demographic variables ,age factors is associated with prevalence and other variables like gender,martial status, education,occupation,income,types of family was not associated with the prevalence of poor sleep quality.

**Keywords:** Prevalence of poor sleep quality,Diabetic patients,assess, predictors.

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### I. Introduction

Sleep is a basic biological function which is essential for life.It is defined as unconsciousness from which the person can be aroused d by sensory or other stimuli.

Good quality sleep is one of the most important things that we need body healthy which really requires adequate duration,appropriate timing and regularity ,and the absence of sleep disorder<sup>1</sup>

Type 2 diabetic mellitus and sleep disturbance both are common health problem and detriments to each other.sleep disturbance are common individuals diabetic.Sleep disturbance may be due to the disease itself or due to physical complications of diseases<sup>4</sup>

The modernization of the society caused by the change in people's lifestyle has been the most influential factors in the increase of the diabetic incidence.<sup>5</sup>

According to **International diabetes federation** ,the number of patients with type 2 diabetes will be 40 million with an increase of 80%. more that 3 million people have diabetes in India,which tripe every 15 years. Increasing number of diabetes cases is more serious in the middle east and is due to the economic changes ,and the aging population.<sup>5</sup>

The effect of unhealthy sleep pattern on the body are numerous and widely varied, spanning different body systems.accumulated evidence shows that disturbed sleep is an important factors associated with the impairment of the entire spectrum of mental abilities ,ranging from simple to more complicated mental function .

**OBJECTIVES OF THE STUDY**

- To assess the prevalence of poor sleep quality among type 2 diabetic patients
- To identify the predictors and to associate the predictors with sleep quality among type 2 diabetic patient
- To associate the poor sleep quality with selected demographic variable among type2 diabetes patients.

**II. Materials And Methods:**

Quantitative non Experimental–Descriptive Approach.**Research Design** is Non Experimental, Descriptive Research Design. **Sampling Technique** : Non probability purposive sampling technique was adopted.**Sampling technique**:Non probability purposive sampling technique is adopted.**Research setting**: The study was done in the selected poonchery village ,kancheepuram district,Tamil nadu ,India.**Population**:

All the diabetes patients residing in the selected village and who fulfilled the sampling criteria.**Sample**: A samples was identified from the population of diabetic patient with poor sleep quality and its predictors was assessed from the sample of diabetic patients with poor sleep quality .And sample was collected for the period of 1 month.

Patients who are all diagnosed as type 2 diabetes mellitus. Diabetic patients who are with sleep disturbance.

**III. Result And Discussion**

**Tool Description**

- A) Description of demographic variables
  - B) Description of poor sleep quality among type 2 diabetic patients.
  - C) Distribution of predictors of poor sleep quality among the prevalence of poor sleep quality among type 2 diabetic patients.
  - D) Description of the association of the predictors of poor sleep quality like duration of diabetes, types of treatment, history of presence complication,history of co mobility, BMI, glycemic control, unhealthy habits with the prevalence of poor sleep quality.
- Description of the association of selected demographic variables like age,sex,marital status,educational status, occupation status,income,types of family with prevalence of poor sleep quality among type 2 diabetic patients.

**TABLES:**

**Table 1**

**Frequency and percentage distribution of the peoples.**

S.NO	DEMOGRAPHIC VARIABLES	CATEGORY	NUMBER	PERCENTAGE
1)	Age	a) under 45	40	40%
		b) 45-54	27	27%
		c) 54-64	22	22%
		d) Upto 65	11	11%
2)	Sex	a)male	63	63%
		b)female	37	37%
		c)transgender	-	-
3)	Marital status	a) Single	38	38%
		b) Married	45	45%
		c) Widow	17	17%
		d) divorced	-	-
4)	Education status	a) Non formal education	45	45%
		b) Primary education	38	38%
		c) Middleschool education	17	17%
		d) High school education	-	-
		e) graduate	-	-
5)	Occupational status	a) house wife	43	43%
		b) Self employee	40	40%
		c) Government employee	17	17%
		d) retired	-	-
6)	Family income	a)below 5000per month	45	45%
		b)Rs 5001-10000per	33	33%
		c)Rs 10001 per month	22	22%
		d)More than	-	-

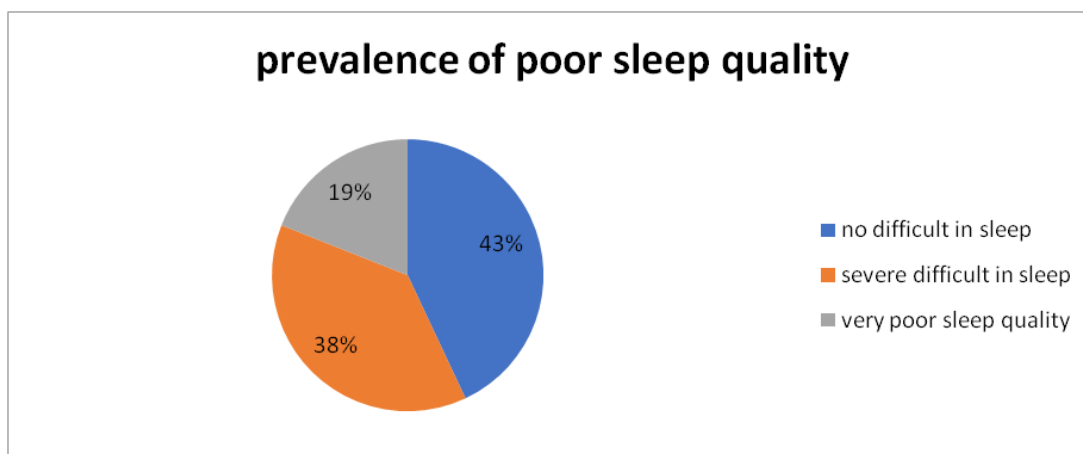
7)	Types f family	a) nuclear family	60	60%
		b) Joint family	40	40%

Under the frequency and percentage distribution we have drawn tabular column of various personal information data like Age , Gender,marital status, Education status ,occupational status,family income Types of family.

**Table 2**  
**Frequency and percentage distribution of the level of poor sleep quality among Type 2 diabetic patients.**

S.NO	LEVEL OF PREVALENCE	SCORE	LEVEL OF PREVALENCE IN PERCENTAGE	MEAN PERCENTAGE	STANDARD DEVIATION
1	No difficult in sleep	43	43%	4	1.53
2	Severe difficult in sleep	38	38%		
3	Very Poor sleep quality	19	19%		

Regarding the prevalence of poor sleep quality 43(43%) belongs to no difficult in sleep,38(38%) belongs to severe difficult in sleep and 19(19%) belongs to very poor sleep quality.



**TABLE:3**

Assess the clinical characteristic and predictors of poor sleep quality among type 2 Diabetic patients.

S.NO	DEMOGRAPHIC VARIABLES	CATEGORY	NUMBER	PERCENTAGE
1)	Duration of diabetes	a) 1-3 year	42	42%
		b) 3-5 years	29	29%
		c) 5-10 years	19	19%
		d) More than 10 years	10	10%
2)	Types of treatment	a) Oral hypoglycemic agent	40	40%
		b) Either Oral hypoglycemic agent or insulin	26	26%
		c) Alternative system of medicine	23	23%
		d) No treatment	11	11%
3)	History of presence of complication	a) Retinopathy	37	37%
		b) Nephropathy	30	30%
		c) Neuropathy	20	20%
		d) Cardiovasuclar diseases	13	13%

4)	History of co mobility	a) Hypertension b) Bronchial asthma c) Chronic obstructive pulmonary disorder d) Gastric esophagus reflex disorder	40 35 20 5	40% 35% 20% 5%
5)	BMI	a) Underweight b) Normal c) Overweight d) obese	41 37 15 7	41% 37% 15% 7%
6)	Glycemic control urine sugar test	a) Blue b) Green c) Orange d) Brick red	35 24 25 16	35% 24% 25% 16%
7)	Unhealthy habits	a) Smoking b) Coffee consumption before 6hrs of sleep c) alcoholism	30 40 20	30% 40% 20%

Thus the above information is regarding to the Pittsburg’s scale of the selected predictors of the poor sleep quality and the percentage of each as been distributed according to the level of data analysis. And that shows types of treatment is significant with the association of predictors and duration of diabetes, history of complication, history of co mobility ,BMI, glycemic control and unhealthy habits are not significant.

**Table .4 Associate the predictors with poor sleep quality and type 2 diabetic patients.**

S.No	Predictors of poor sleep quality	Knowledge score			Chi Square test
		Variables	No difficult in sleep	Severe difficult in sleep	
1)	Duration of diabetes	A) 1-3 years	9	2	X <sup>2</sup> = 12.59 P<0.05 NS
		B) 3-5 years	0	4	
		C) 5-10 years	0	12	
		D) > 10 years	4	29	
2)	Types of treatment	A) Oral hypoglycemic agent & insulin	2	24	X <sup>2</sup> =25.11 P<0.05 S*
		B) Either oral hypoglycemic agent & insulin	4	0	
		C) Alternative system of medicine	0	0	
		D) No treatment	1	0	
3)	History of presence complication	A) retinopathy	0	8	X <sup>2</sup> =9.98 P<0.05 NS
		B) nephropathy	0	7	
		C) neuropathy	0	15	
		D) Cardiovascular disease	0	6	
4)	History of co mobility	A) Hypertension	3	2	X <sup>2</sup> =0.11 P<0.05 NS
		B) Bronchial asthma	2	34	
		C) Chronic obstructive pulmonary disorder	4	15	
		D) Gastro esophagus reflex disorder	0	10	
5)	BMI	A) Underweight	2	1	X <sup>2</sup> =84.3 P<0.05 S*
		B) normal	0	20	
		C) overweight	0	4	
		D) Obese	0	20	
6)	Glycemic control urine sugar test	A) blue	0	21	X <sup>2</sup> =8.86 P<0.05 NS
		B) green	20	10	
		C) orange	3	0	
		D) Brick red	0	0	
7)	Unhealthy habits	A) smoking	0	11	X <sup>2</sup> =3.36 P<0.05 NS
		A) Coffee consumption before 30 min of sleep	4	9	
		B) alcoholism	0	0	

Predictors of the poor sleep quality and the percentage of each as been distributed according to the level of data analysis. And that shows types of treatment is significant with the association of predictors and duration of diabetes, history of complication, history of co mobility ,BMI, glycemic control and unhealthy habits are not significant.

**TABLE :5**  
**Association between the level of prevalence of poor sleep quality any type 2 Diabetic patients demographic variables.**

S.No	Demographic variables	Knowledge score			Chi Square test
		Variables	No difficult in sleep	Severe difficult in sleep	
1)	Age	a) Under 45	0	3	X <sup>2</sup> =18.51 P = 12.59 (S)
		b) 45-54	0	5	
		c) 54-64	1	7	
		d) Upto 65	1	2	
2)	Sex	a)male	2	9	X <sup>2</sup> =1.69 P=5.99 (NS)
		b)female	0	8	
3)	Marital status	A) single	1	7	X <sup>2</sup> =6.84 P=12.59 (NS)
		B) married	1	9	
		C)widow	0	0	
		C) divorce	0	1	
4)	Educational status	A) Non formal education	1	7	X <sup>2</sup> =0.284 P = 5.99 (NS)
		B) primary education	1	10	
		C) Middle school education			
		D) High school education			
		E) graduate			
5)	Occupational status	C) House wife	1	1	X <sup>2</sup> = 3.027 P=12.59 (NS)
		B)self employee	1	9	
		C)Government employee	0	7	
		D) retired	0	0	
6)	Family income	A) Below 5000 per month	2	14	X <sup>2</sup> =2.830 P = 12.59 (NS)
		B) 5000-10000 per month	0	1	
		C) 10000 per month	0	1	
		D) More than	0	1	
7)	Types of family	Nuclear family	2	14	X <sup>2</sup> =1.653 P = 5.99 (NS)
		Joint family	0	3	

Depicts that there is a significance association between the demographic variables like age with poor sleep quality and other factors like gender, education status ,types of family, socio economic status, were non significant with regarding to prevalence of poor sleep quality.

**STUDY FINDINGS:**

- Maximum no of diabetic patients were in the age group of under45 age40(40%)
- Maximum male 63(63%)are diabetic patients.
- Majority of education status was Non formal education 45(456%)
- Majority of family of diabetic patients are nuclear family60(60%)
- Majority of socio economic status of the diabetic patients are Rs 5001-10000 per month 45(45%)
- Majority of person occupational status weer housewife 43(43%)
- Majority of martial status were single 38(38%)
- Descriptive study that analysis reveal that with respect to knowledge the mean value 4 with standard deviation 1.53 statistically p <0.05 level.
- Demographic variables shows that there is a significant associated between prevalence of poor sleep quality among type 2 diabetic patients

#### **IV. Discussion**

Diabetic is the most prevalent causes for almost most diseases, affecting at least 600 million people worldwide and is an important contribute to mortality. And the most affected ares is the sleep quality which was find out in this study thus to manage the sleep quality we should analysis the sleep pattern of the patients affected with the diabetic and teach the prevalence of poor sleep among diabetic patients The mean proportion of control diabetic among all diabetic patients being only 13% because of poor sleep and is one of the leading causes of failure to achieve diabetic control.

Ensure that the government health care facilities have health care infrastructure ,service personnel and quality of health care services to the need in education the public on prevention of diabetic patients. Efforts to be made enhance the capabilities of the doctors, village health nurses and other paramedical through pre-services and in service training programmed a prevention of diabetic in patients.

#### **V. Conclusion**

We have conducted a research on “ Prevalence of poor sleep quality among type2 diabetic patients at selected rural community in kanchipuram District, Tamil Nadu” India. The sample of 100 diabetic patients was selected in village purposive sampling technique.

The prevalence of poor sleep quality 43(43%) belongs to no difficult in sleep,38(38%) belongs to severe difficult in sleep and 19(19%) belongs to poor sleep quality.. Descriptive study that analysis reveal that with respect to knowledge the mean value 4 with standard deviation 1.53 statistically  $p < 0.05$  level.

#### **CONFLICT OF INTEREST:**

NIL

#### **SOURCE OF FUNDING:**

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#### **ETHICAL CLEARENCE:**

Chettinad Academy of Research and Education, Institutional Human Ethics Committee.

#### **Reference**

- [1]. KasturiSundarRao. A Text book of community health nursing .3<sup>rd</sup> ed .India:BI publisher;2000.
- [2]. Kamala S .Essential in community health nursing practice 1<sup>st</sup> .ed India;BI publisher ;2005.
- [3]. MC Gupta,Mahaian BK .Text book of prevention and social medicine,3<sup>rd</sup> ed. New Delhi :Jaypee brothers :2003.
- [4]. K.K Gulani, Principle and practice of community health nursing 2<sup>nd</sup>. New Delhi:Kumar Publishing House;2014
- [5]. Suitha Pathey. Text book of community health nursing .1<sup>st</sup> ed. Delhi; CBS Publisher; 2013.
- [6]. Willims hopper Understanding medical surgical nursing .3<sup>rd</sup> ed .P.A Davis Publication.
- [7]. Deepak Khandelwal ,community health nursing .4<sup>th</sup> ed.ugs publication.
- [8]. Clement.t department of community health nursing 2 nd edition
- [9]. Raviranganathan, community health nursing 4<sup>th</sup> edition .P. D davis publication
- [10]. OsamaMohammed.international journal of community medicine and public health,community health nursing .1<sup>st</sup> edition.

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