



A CROSS-SECTIONAL STUDY TO DETERMINE THE QUALITY OF SLEEP AMONG PATIENTS WITH CARDIOMETABOLIC DISEASES IN SELECTED HOSPITALS BANGALORE

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ABSTRACT

Background: Health is about what makes us feel good physically, mentally, socially, and spiritually. Health can be promoted by encouraging healthful activities, such as regular physical exercise, healthy diet and adequate sleep. Sleep plays a vital role in metabolic regulation, energy balance, and overall health. Inadequate or non-restorative sleep can interfere with normal physical, mental, social, and emotional functioning. Poor sleep quality is commonly observed among patients with cardiometabolic diseases such as hypertension, diabetes mellitus, and obesity, leading to adverse health outcomes. **Methods:** A descriptive cross sectional research design was adopted to determine the quality of sleep among patients with cardiometabolic diseases. There were 200 samples who participated in the study. The samples were selected by using convenience sampling technique. The Pittsburgh Sleep Quality Index (PSQI) was used to assess the quality of sleep among cardiometabolic disease patients. **Results:** The results of the present study showed that, majority of the study participants 142 (71 percent) were having <5 PSQI score which indicates good sleep, and remaining 58 (29 percent) were having ≥ 5 PSQI score which indicates poor sleep. The study findings also showed a significant association between quality of sleep and socio-demographic variables such as educational qualification, dietary pattern, and habits at 0.05 level of significance, whereas no significant association was found with age, gender, marital status, occupation, type of family, family history of cardiometabolic diseases, history of comorbid diseases, and duration of illness. **Conclusion:** The study concluded that although the majority of cardiometabolic patients had good sleep quality, factors such as educational qualification, dietary pattern, and habits were significantly influenced their quality of sleep. This indicates the need for early identification and appropriate intervention to improve their overall health and quality of life.

KEYWORDS: Quality of sleep, cardiometabolic diseases, Pittsburgh Sleep Quality Index (PSQI).

INTRODUCTION

Sleep is a basic human need. It is a universal biological process common to all the people. Human spends one third of their lives asleep. The sleep is required for many reasons such as to cope with daily stresses, prevent fatigue, to conserve energy, restore the mind and body and enjoy life fully.^[1] Sleep plays a vital role in metabolic regulation, energy balance, and overall health.^[2]

Inadequate or non-restorative sleep can interfere with

normal physical, mental, social, and emotional functioning.^[3] Cardiometabolic health is link to the risk of dyslipidemia, obesity, hyperglycaemia, and hypertension. These risk factors not only increase the likelihood of cardiovascular disease but are also strongly associated with sleep issues such as sleep apnea and insomnia.^[4]

Poor sleep health is associated with cardiometabolic disease and related risk factors, including heart disease, stroke, elevated blood pressure and lipid levels,

inflammation, glucose intolerance, obesity, physical inactivity, poor diet, unhealthy substance use, poor mental health, and increased all-cause and cardiovascular mortality, and is associated with social determinants of cardiovascular health and health disparities.^[3]

Globally, studies indicate that nearly 40–60% of patients with cardiometabolic diseases suffer from poor sleep quality. In India, rapid urbanization, lifestyle changes, and increased stress levels have further exacerbated sleep disturbances. Disease and hospitalization have a close relationship with sleep disturbances. Globally a significant portion of the adult population experiences sleep disturbances, with estimates ranging from 25% to 30%.^[5] While in other regions of India, including urban and rural areas 32.6% of individual have highlighted the prevalence of sleep disturbances and their association with various factors like stress, illness, and environmental factors.^[6]

The result of Wang et al. study showed that 81% of the patients with heart failure reported a poor sleep quality. Also, hypertension is associated with poor sleep quality, which adversely affects physical and mental health, and can increase the incidence rate and mortality of cardiovascular disease, cancer and depression.^[7]

Short sleep duration has a substantial influence on the overall health of an individual. Short sleep time can be a consequence of lifestyle habits, environmental factors, or the presence of a sleep disorder, such as insomnia or sleep-disordered breathing. Short sleep time is associated with increased morbidity and mortality, mainly from cardiovascular disorders including coronary artery disease, arrhythmias, and hypertension.^[8]

Inadequate sleep has a negative association with general health and well-being. However, information about the quantity and quality of sleep in patients in general hospital wards is lacking.^[9] About 40% of medical patients without a known sleep disorders are actually at high risk for sleep disorders. Therefore, the hospital setting is a missed opportunity to optimize the sleep environment for better sleep in hospital and post-discharge.^[10]

METHODS

STATEMENT OF THE PROBLEM

“A study to determine the quality of sleep among patients with cardiometabolic diseases in selected hospitals at Bangalore”.

OBJECTIVE OF THE STUDY

1. To determine the quality of sleep among patients with cardiometabolic diseases using Pittsburgh Sleep Quality Index (PSQI).
2. To find out the association between the quality of sleep and selected socio-demographic variables among patients with cardiometabolic diseases.

HYPOTHESIS

- There will be a significant association between the quality of sleep and selected socio-demographic variables among patients with cardiometabolic diseases.

ASSUMPTION

- Patients with cardiometabolic diseases may experience sleeping disturbances.

SAMPLING CRITERIA

Inclusion criteria

Cardiometabolic patients who are-

- ≥ 18 years of age.
- Available at the time of data collection.
- Willing to participate in the study.
- Able to communicate English/Hindi.

Exclusion criteria

Cardiometabolic patients who are-

- Critically ill at the time of data collection.
- On prescribed sedatives.
- Diagnosed with sleep disorders unrelated to cardiometabolic disease.
- Cognitively impaired.

RESEARCH METHODOLOGY

To accomplish the objective of the study “Descriptive cross sectional research design” was adopted for the present study. The study was conducted in Apollo hospital and Supra Multispecialty Hospitals, Bangalore. The samples were selected by using convenience sampling technique and data was collected through a self-administered questionnaire. The tool used for the present study was the Pittsburgh Sleep Quality Index (PSQI).

Description of Tool

The tool consists of two sections viz. Section A and Section B.

Section A: It consists of items related to the baseline characteristics of patients with cardiometabolic diseases and includes 13 variables such as age, gender, marital status, educational qualification, occupation, type of family, dietary pattern, habits, family history of cardiometabolic disease, medical diagnosis, history of comorbid disease, duration of illness, and purpose of hospital visit.

Section B: Consists of Pittsburgh Sleep Quality Index (PSQI). It includes 7 components such as subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medication, and daytime dysfunction. The scores of all seven components are summed to obtain a global PSQI score ranging from 0 to 21. Higher scores indicate poorer sleep quality. A global score of less than 5 indicates good sleep quality, whereas a score greater than 5 indicates poor sleep quality.

Methods of data collection

The data was collected after obtaining formal permission from the concerned authorities of Apollo Hospitals, and Supra Multi speciality Hospital at Bangalore. A written informed consent was obtained after explaining the purpose of the study. Confidentiality of the data was ensured throughout the study. The data collection was

done from 1/02/2026 to 15/03/2026. Data was collected from 200 patients with cardiometabolic diseases. It took about 10-15 minutes to collect data from one patient. Self-administered PSQI was used to assess the quality of sleep from the patients with cardiometabolic diseases. Data were collected from a minimum of 10 patients with cardiometabolic diseases per day.

RESULTS

The findings of the study were described as follows

SECTION-I: FREQUENCY AND PERCENTAGE DISTRIBUTION OF CARDIOMETABOLIC PATIENTS ACCORDING TO SOCIO-DEMOGRAPHIC VARIABLES.

Table 1: Frequency and percentage distribution of cardiometabolic patients according to socio-demographic variables.

(N=200)

Sl.no	Demographic variables	Frequency (f)	Percentage (%)	
1	Age (in years)	≤ 55 yrs	96	48
		>55 yrs	104	52
2	Gender	Male	135	67.5
		Female	65	32.5
3	Marital status	Married	179	89.5
		Unmarried	21	10.5
4	Educational qualification	No formal education	6	3
		Primary school	20	10
		High school	79	39.5
		Secondary school	36	18
		Graduate and above	59	29.5
5	Occupation	Unemployed	43	21.5
		Self-employee	73	36.5
		Employee (Pvt/ Govt)	48	24
		Retired	36	18
6	Types of family	Nuclear family	145	72.5
		Joint family	52	26
		Extended family	3	1.5
7	Dietary pattern	Vegetarian	102	51
		Non-vegetarian	98	49
8	Habits of smoking, tobacco, alcohol consumption and others	Yes	47	23.5
		No	153	76.5
9	Family history of cardiometabolic disease	Yes	54	27
		No	146	73
10	Medical diagnosis	Only cardiac diagnosis	84	42
		Only one cardiac disease with one comorbidity	85	42.5
		Only one cardiac disease with two and more comorbidities	31	15.5
11	History of comorbid disease	Yes	116	58
		No	84	42
12	Duration of illness	Less than one year	73	36.5
		1-5 years	101	50.5
		More than 5 years	26	13
13	Purpose of present hospital visit	Treatment	56	28
		Regular check-up	61	30.5
		Pre-operative check-up	17	8.5
		Post-operative check-up	66	33

Table 1 shows the frequency and percentage distribution of patients with cardiometabolic diseases according to

their sociodemographic variables.

With regards to age in years, majority of the patients with cardiometabolic diseases 104 (52 percent) were above 55 years of age and 96 (48.0 percent) were less than or equal to 55 years of age.

As regards to gender, majority of the patients with cardiometabolic diseases 135 (67.5 percent) were males, 65 (32.5 percent) were females.

According to marital status, majority 179 (89.5 percent) of the patients with cardiometabolic diseases were married, and 21 (10.5 percent) were unmarried.

Regarding the educational qualification, majority of the patients with cardiometabolic diseases 79 (39.5 percent) had a high school education, 59 (29.5 percent) were graduates, 36 (18 percent) had a secondary school education, 20 (10.0 percent) had primary school education and least of 6 (3 percent) did not have any formal education.

According to occupation, majority of the patients with cardiometabolic diseases 73 (36.5 percent) were self-employee, 48 (24 percent) were private and government employee, 43 (21.5 percent) were unemployed, and 36 (18.0 percent) were retired.

According to type of family, majority of the patients with cardiometabolic diseases 145 (72.5 percent) belongs to a nuclear family, 52 (26.0 percent) belong to a joint family and 3 (1.5 percent) belongs to an extended family.

With regards to the dietary pattern, majority of the of patients with cardiometabolic diseases 102 (51 percent) were vegetarians, 98 (49 percent) were non-vegetarians.

According to the habits, majority of the patients with cardiometabolic diseases 153 (76.5 percent) were not

having the habits of smoking, tobacco, alcohol consumption and any others whereas 47 (23.5 percent) were having any one of the habits of smoking, tobacco, alcohol consumption.

Regarding family history of patients with cardiometabolic diseases, majority 146 (73 percent) were not having any family history of cardiometabolic disease and 54 (27 percent) were having the family history of cardiometabolic disease.

According to medical diagnosis, majority of the patients with cardiometabolic diseases 85 (42.5 percent) were having the cardiac disease with one comorbidity, 84 (42 percent) were having only cardiac disease and 31 (15.5 percent) were having cardiac disease with two and more comorbidities.

With regards to history of comorbid disease, majority of the patients with cardiometabolic diseases 116 (58 percent) were having the history of comorbid disease and 84 (42 percent) were not having the history of comorbid disease.

In respect to the duration of illness, majority of the patients with cardiometabolic diseases 101 (50.5 percent) were having their illness for 1-5 years of duration, 73 (36.5 percent) were having less than one year of duration of illness, and 26 (13 percent) were having their illness for more than 5 years.

With regards to purpose of hospital visit, majority of the patients with cardiometabolic diseases 66 (33 percent) had come for post-operative checkup, 61 (30.5 percent) had come for regular check-up, 56 (28 percent) were admitted for treatment, and 17 (8.5 percent) had come for pre-operative check-up.

SECTION-II FREQUENCY AND PERCENTAGE DISTRIBUTION OF PATIENTS WITH CARDIOMETABOLIC DISEASES ACCORDING TO SLEEP QUALITY



Figure 1: Percentage distribution of patients with cardiometabolic diseases according to sleep quality.

Figure 1 shows that out of 200 patients with cardiometabolic diseases, majority 142 (71 percent) had

good sleep quality (PSQI < 5), while 58 (29 percent) experienced poor sleep quality (PSQI ≥ 5).

Table 2: Frequency and percentage distribution of patients with cardiometabolic diseases according to components of PSQI.

(N=200)

Sl.no	Components of PSQI	Frequency (f)	Percentage (%)	
1	Subjective sleep quality	Very good	45	22.5
		Fairly good	148	74
		Fairly bad	7	3.5
		Very bad	0	0
2	Sleep latency	≤15 minutes	63	31.5
		16-30 minutes	115	57.5
		31-60 minutes	18	9
		>60 minutes	4	2
3	Sleep duration	>7 hours	152	76
		6-7 hours	40	20
		5-6 hours	8	4
		5 hours	0	0
4	Sleep efficiency	>85%	178	89
		75-84%	22	11
		65-74%	0	0
		<65%	0	0
5	Sleep disturbance	Not during past month	16	8
		Less than once a week	173	86.5
		Once or twice a week	10	5
		Three or more times a week	1	0.5
6	Use of sleep medication	Not during past month	196	98
		Less than once a week	3	1.5
		Once or twice a week	0	0
		Three or more times a week	1	0.5
7	Daytime dysfunction	No problem at all	89	44.5
		Only a very slight problem	91	45.5
		Somewhat of a problem	15	7.5
		A very big problem	5	2.5

Table 2 shows the frequency and percentage distribution of patients with cardiometabolic diseases according to components of PSQI.

Majority of the patients with cardiometabolic diseases perceived their subjective sleep quality as fairly good 148 (74 percent), 45 (22.5 percent) reported very good subjective sleep quality, 7 (3.5 percent) perceived their subjective sleep quality as fairly bad and none of the patients with cardiometabolic diseases reported very bad subjective sleep quality.

Regarding sleep latency, more than half of the patients with cardiometabolic diseases 115 (57.5 percent) reported 16–30 minutes of sleep latency, 63 (31.5 percent) reported within 15 minutes of sleep latency, 18 (9 percent) reported 31-60 minutes of sleep latency, and least 4 (2 percent) reported more than 60 minutes of sleep latency.

With respect to sleep duration, majority of the patients with cardiometabolic diseases 152 (76 percent) were having the sleep duration of more than 7 hours, 40 (20

percent) were having the sleep duration of 6–7 hours, only 8 (4 percent) were having the sleep duration of 5–6 hours and none of the patients with cardiometabolic diseases were having a sleep duration of 5 hours.

Concerning to sleep efficiency, most of the patients with cardiometabolic diseases 178 (89 percent) had sleep efficiency greater than 85%, only 22 (11 percent) had sleep efficiency of 75-84% and none of the cardiometabolic patients had sleep efficiency of 65-74% and sleep efficiency of 65%.

In relation to sleep disturbance, majority of the patients with cardiometabolic diseases 173 (86.5 percent) experienced sleep disturbance less than once a week, 16 (8 percent) experienced no sleep disturbance during the past month, 10 (5 percent) experienced sleep disturbance once or twice a week and 1 (0.5 percent) reported sleep disturbance three or more times a week.

Regarding the use of sleep medication, most of the patients with cardiometabolic diseases 196 (98 percent) had not used any sleep medication during the past month,

3 (1.5 percent) had used sleep medication less than once a week, and least 1 (0.5 percent) had used sleep medication for three or more times a week.

With respect to daytime dysfunction, 91 (45.5 percent) patients with cardiometabolic diseases experienced only

a very slight problem, 89 (44.5 percent) reported no problem at all, 15 (7.5 percent) patients with cardiometabolic diseases reported somewhat of a problem and 5 (2.5 percent) reported a very big problem of daytime dysfunction.

SECTION-III: ASSOCIATION BETWEEN THE SLEEP QUALITY AND SELECTED SOCIO-DEMOGRAPHIC VARIABLES AMONG PATIENTS WITH CARDIOMETABOLIC DISEASES.

Table 3: Association between the sleep quality and selected socio-demographic variables among patients with cardiometabolic diseases.

(N=200)

Demographic variables		<5 PSQI Score	≥5 PSQI Score	df	Chi square test (χ^2)	p-value
		Good sleep quality	Poor sleep quality			
Age	≤55 years	70	26	1	0.3295	0.566**
	>55 years	72	32			
Gender	Male	94	41	1	0.3789	0.5382**
	Female	48	17			
Marital status	Married	126	53	1	0.307	0.5795**
	Unmarried	16	05			
Educational qualification	No formal education	05	01	3	21.3151	0.00009*
	Up to high school	76	23			
	Secondary school	32	04			
	Graduate and above	29	30			
Occupation	Unemployed	33	10	3	5.9625	0.1134**
	Self employed	57	16			
	Employed (Pvt/ govt)	29	19			
	Retired	23	13			
Types of family	Nuclear	101	44	1	0.4631	0.4962**
	Joint/extended	41	14			
Dietary pattern	Vegetarian	79	23	1	4.2073	0.0403*
	Non-vegetarian	63	35			
Habits (smoking, alcohol consumption, tobacco and others)	Yes	27	20	1	5.481	0.0192*
	No	115	38			
Family history of cardiometabolic diseases	Yes	100	46	1	1.6504	0.1989**
	No	42	12			
History of comorbid diseases	Yes	55	29	1	2.1462	0.1429**
	No	87	29			
Duration of illness	Less than one year	50	23	2	3.8046	0.1492**
	1-5 years	77	24			
	More than 5 years	15	11			

*Significant **Not significant

Table 3 shows the association between the sleep quality and selected socio-demographic variables among patients with cardiometabolic diseases.

Chi square test was done to find the association between the sleep quality and selected socio-demographic variables among patients with cardiometabolic diseases. The findings revealed that there was a statistical significant association between sleep quality and educational qualification ($\chi^2 = 21.3151$, $p = 0.00009$), dietary pattern ($\chi^2 = 4.2073$, $p = 0.0403$), and habits ($\chi^2 = 5.481$, $p = 0.0192$), as the obtained p-values were less than the level of significance set at $p < 0.05$.

The findings also revealed that there was no significant association between sleep quality and selected demographic variables such as age in years ($\chi^2 = 0.3295$, $p = 0.566$), gender ($\chi^2 = 0.3789$, $p = 0.5382$), marital status ($\chi^2 = 0.307$, $p = 0.5795$), occupation ($\chi^2 = 5.9625$, $p = 0.1134$), type of family ($\chi^2 = 0.4631$, $p = 0.4962$), family history of cardiometabolic disease ($\chi^2 = 1.6504$, $p = 0.1989$), history of comorbid diseases ($\chi^2 = 2.1462$, $p = 0.1429$), and duration of illness ($\chi^2 = 3.8046$, $p = 0.1492$), as the obtained p-values were greater than the level of significance set at $p < 0.05$.

The finding shows that there is a significant association

between sleep quality and selected socio demographic variables among patients with cardiometabolic diseases such as educational qualification, dietary pattern and habits. Hence the research hypothesis **H1** was accepted.

DISCUSSION

The findings of the study have been discussed in the following sections:

- **Section I:** Frequency and percentage distribution of patients with cardiometabolic diseases based on their socio-demographic data.
- **Section II:** Frequency and percentage distribution of patients with cardiometabolic diseases according to their sleep quality.
- **Section III:** Association between the sleep quality and selected socio-demographic variables of patients with cardiometabolic diseases.

Section I: Frequency and percentage distribution of patients with cardiometabolic diseases based on their socio-demographic data.

- According to age, out of 200 patients with cardiometabolic diseases majority 104 (52.0 percent) were above 55 years of age and 96 (48.0 percent) were less than or equal to 55 years of age respectively.
- According to gender, majority of the patients with cardiometabolic diseases 135 (67.5 percent) were males, 65 (32.5 percent) were females.
- According to marital status, most of the patients with cardiometabolic diseases 179 (89.5 percent) were married, and 21 (10.5 percent) were unmarried.
- With regards to educational qualification, majority of the patients with cardiometabolic diseases 79 (39.5 percent) had a high school education, 59 (29.5 percent) were graduates, 36 (18.0 percent) had a secondary school education, 20 (10.0 percent) had primary school education and least 6 (3.0 percent) did not have any formal education.
- According to occupation, most of the patients with cardiometabolic diseases 73 (36.5 percent) were self-employee, 46 (23.0 percent) were private employee, 43 (21.5 percent) were unemployed, 36 (18.0 percent) were retired and 2 (1.0 percent) were government employee.
- With regards to type of family, majority of the patients with cardiometabolic diseases 145 (72.5 percent) belongs to a nuclear family, 52 (26.0 percent) belong to a joint family and 3 (1.5 percent) belongs to an extended family.
- Concerning to dietary pattern, majority of the patients with cardiometabolic diseases 102 (51.0 percent) were vegetarians, 98 (49 percent) were non-vegetarians.
- Concerning to habits, majority of the patients with cardiometabolic diseases 153 (76.5 percent) were not having the habits like smoking, tobacco, alcohol consumption, and any others whereas 47 (23.5 percent) were having any one of the habits of smoking, tobacco, alcohol consumption.

- According to family history of cardiometabolic disease, majority of the patients with cardiometabolic diseases 146 (73 percent) were not having any family history of cardiometabolic diseases whereas 54 (27 percent) were having the family history of cardiometabolic diseases.
- According to medical diagnosis, most of the patients with cardiometabolic diseases 85 (42.5 percent) were having the cardiac disease with one comorbidity, 84 (42 percent) were having only cardiac disease and 31 (15.5 percent) were having cardiac disease with two and more comorbidities.
- Regarding the history of comorbid disease, more than half of the patients with cardiometabolic diseases 116 (58 percent) were having the history of comorbid disease and 84 (42 percent) were not having the history of comorbid disease.
- With regards to duration of illness, majority of the patients with cardiometabolic diseases 101 (50.5 percent) were having their illness for 1-5 years duration, 73 (36.5 percent) were having less than one year duration of illness, and only 26 (13.0 percent) were having their illness for more than 5 years duration.
- According to purpose of hospital visit, about 66 (33 percent) patients with cardiometabolic diseases had come for post-operative checkup, 61 (30.5 percent) had come for regular check-up, 56 (28 percent) were admitted for treatment, and 17 (8.5 percent) had come for pre-operative check-up.

The findings of the present study was supported by a study conducted to assess sleep disturbance and quality of sleep among patient with cardiovascular diseases. The study revealed that the majority of the patients (51%) were of the age group between 56 and 65 years, and 71% were male with CVD.^[11]

Section- II: Frequency and percentage distribution of patients with cardiometabolic diseases according to their sleep quality.

Among the total 200 patients with cardiometabolic diseases, majority 142 (71 percent) had good sleep quality (PSQI < 5), while 58 (29 percent) experienced poor sleep quality (PSQI ≥ 5).

The findings of the present study was supported by a study conducted to assess sleep disturbance and quality of sleep among patient with cardiovascular diseases in Amrita Institute of Medical Sciences, Kochi, Kerala in 2019. Sleep disturbances were present in 80% of the patients with CVD, among which 56% patients had mild disturbances, 20% patients with moderate sleep disturbances, and 4% patients with severe sleep disturbances. The result also indicated that 48% of patients had poor sleep quality.^[11]

Frequency and percentage distribution of patients with cardiometabolic diseases according to components of PSQI

- Majority of patients with cardiometabolic diseases perceived their subjective sleep quality as fairly good 148 (74 percent), 45 (22.5 percent) reported very good subjective sleep quality, only 7 (3.5 percent) perceived their subjective sleep quality as fairly bad and none of the patients with cardiometabolic diseases reported very bad subjective sleep quality.
- Regarding sleep latency, more than half of the patients with cardiometabolic diseases 115 (57.5 percent) reported 16–30 minutes of sleep latency, 63 (31.5 percent) reported within 15 minutes of sleep latency, 18 (9 percent) reported 31-60 minutes of sleep latency, and least 4 (2 percent) reported more than 60 minutes of sleep latency.
- With respect to sleep duration, majority of the patients with cardiometabolic diseases 152 (76 percent) were having the sleep duration of more than 7 hours, 40 (20 percent) were having the sleep duration of 6–7 hours, 8 (4 percent) were having the sleep duration of 5–6 hours and none of the patients with cardiometabolic diseases were having a sleep duration of 5 hours.
- Concerning to sleep efficiency, most of the patients with cardiometabolic diseases 178 (89 percent) had sleep efficiency greater than 85%, only 22 (11 percent) had sleep efficiency of 75-84% and none of the cardiometabolic patients had sleep efficiency of 65-74% and sleep efficiency of 65%.
- In relation to sleep disturbance, majority of the patients with cardiometabolic diseases 173 (86.5 percent) experienced sleep disturbance less than once a week, 16 (8 percent) experienced no sleep disturbance during the past month, 10 (5 percent) experienced sleep disturbance once or twice a week and 1 (0.5 percent) reported sleep disturbance three or more times a week.
- Regarding the use of sleep medication, most of the patients with cardiometabolic diseases 196 (98 percent) had not used any sleep medication during the past month, 3 (1.5 percent) had used sleep medication less than once a week, and least 1 (0.5 percent) had used sleep medication for three or more times a week.
- With respect to daytime dysfunction, 91 (45.5 percent) patients with cardiometabolic diseases experienced only a very slight problem, 89 (44.5 percent) reported no problem at all, 15 (7.5 percent) patients with cardiometabolic diseases reported somewhat of a problem and 5 (2.5 percent) reported a very big problem of daytime dysfunction.

The findings of the present study was supported by a cross-sectional, hospital-based study conducted to evaluate sleep quality among patients with coronary artery disease (CAD) with comorbid diabetes mellitus and hypertension in the General Medicine Department of a tertiary care hospital in Puducherry. In this study 100

adult patients diagnosed with CAD were enrolled. The study was found that 63% of participants had poor sleep quality (PSQI ≥ 5). Among all participants, mean sleep duration and sleep latency varied, with a substantial proportion reporting difficulty initiating or maintaining sleep. Components of the PSQI such as sleep latency and habitual sleep efficiency indicated disruptions among CAD patients. Poor sleep quality was highly prevalent among Indian CAD patients, especially in those with comorbid diabetes mellitus and hypertension.^[12]

Section-III: Association between the sleep quality and selected socio-demographic variables of patients with cardiometabolic diseases.

- There was a statistical significant association between sleep quality and educational qualification ($\chi^2 = 21.3151$, $p = 0.00009$), dietary pattern ($\chi^2 = 4.2073$, $p = 0.0403$), and habits ($\chi^2 = 5.481$, $p = 0.0192$), as the obtained p-values were less than the level of significance set at $p < 0.05$.
- The findings also revealed that there was no significant association between sleep quality and selected socio-demographic variables such as age in years ($\chi^2 = 0.3295$, $p = 0.566$), gender ($\chi^2 = 0.3789$, $p = 0.5382$), marital status ($\chi^2 = 0.307$, $p = 0.5795$), occupation ($\chi^2 = 5.9625$, $p = 0.1134$), type of family ($\chi^2 = 0.4631$, $p = 0.4962$), family history of cardiometabolic disease ($\chi^2 = 1.6504$, $p = 0.1989$), history of comorbidity ($\chi^2 = 2.1462$, $p = 0.1429$), and duration of illness ($\chi^2 = 3.8046$, $p = 0.1492$), as the obtained p-values were greater than the level of significance set at $p < 0.05$.

The finding of the study was supported by a descriptive, community-based cross-sectional study conducted from March to May 2025 among 400 adults (aged ≥ 18 years) residing in both urban and rural regions of Punjab. The study found that there was a significant association between sleep quality and age ($p = 0.002$), education level ($p = 0.021$), and residence ($p = 0.047$). Poor sleep was most prevalent among older adults (81.6% in those aged ≥ 46 years), those with lower educational attainment, and rural residents.^[13]

CONCLUSION

The present study assessed the quality of sleep among patients with cardiometabolic diseases. The findings revealed that while a majority of participants has good sleep quality, a notable proportion experienced poor sleep, indicating that sleep disturbances are still a significant concern. In this, the study concludes that poor sleep quality is prevalent among patients with cardiometabolic diseases. Early identification and nursing interventions are essential to improve health outcomes and quality of life. The study emphasizes that sleep assessment should be an integral part of the nursing care for cardiometabolic patients to promote better health outcomes.

DECLARATIONS

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Conflict of interest: No conflict of interest

Ethical approval: Ethical approval was obtained from the Institutional ethics committee of Universal college of Nursing.

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