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Assessment of Sleep Quality among Consumers of Selected Medications and Substances

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, reduced muscle activity and inhibition of nearly all voluntary muscles during rapid eye movement (REM) sleep, and reduced interactions with surroundings. It is distinguished from wakefulness by a decreased ability to react to stimuli, but more reactive than a coma or disorders of consciousness, with sleep displaying different, active brain patterns. Some of the most serious potential problems associated with chronic sleep deprivation are high blood pressure, diabetes, heart attack, heart failure, or stroke. Other potential issues include obesity, depression, impairment in immunity, and lower sex drive.
Method: This was a cross-sectional, survey-based study. The data was collected by one-on-one telephonic and in-person interviews with the respondents. They were informed about the study and recorded their consent in the same data collection form. The consented subjects were administered with a self-assessed questionnaires Pittsburgh sleep quality index(PSQI); the obtained data will be subjected to descriptive statistical methods.
Results: A total number of 502 patients/subjects are included in this study. The age below 30 years showed that the sleep quality was very mildly disturbed(6.65±3.77), in the age category between 30-60 years showed that the sleep quality is little worse or disturbed(11.51±3.60) and in the age category above 60 years showed that the sleep quality is worse(13.31±2.67) than the other two age groups.

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Conclusion: Based on the PSQI global score assessment, the age category below 30 years represented that the sleep quality disturbance is very mild, whereas in the middle-aged group between 30-60 years, the sleep quality disturbance is moderate, and in the age category above 60 years the sleep quality disturbance is more than the age as mentioned earlier groups.

Keywords: REM: Rapid Eye Movement; NREM: Nonrapid Eye Movement; ACE: Angiotensin-Converting Enzyme inhibitor; ARB: Angiotensin Receptor Blocker; PSQI/PSQS: Pittsburgh Sleep Quality Index/Pittsburg sleep Quality of Scores.

1. INTRODUCTION

Sleep occurs in repeating periods, in which the body alternates between two distinct modes: REM sleep and non-REM sleep. Although REM stands for "rapid eye movement," this mode of sleep has many other aspects, including virtual paralysis of the body.

A well-known feature of sleep is the dream, an experience typically recounted in narrative form, which resembles waking life while in progress, but which usually can later be distinguished as fantasy.

During sleep, most of the body's systems are in an anabolic state, helping to restore the immune, nervous, skeletal, and muscular systems; these are vital processes that maintain mood, memory, and cognitive function and play a significant role in the part of the endocrine and immune systems. The internal circadian clock promotes sleep daily at night. The diverse purposes and mechanisms of sleep are the subject of substantial ongoing research. Sleep is a highly conserved behavior across animal evolution.

Humans may suffer from various sleep disorders, including dyssomnias such as insomnia, hypersomnia, narcolepsy, sleep apnea; parasomnias such as sleepwalking and rapid eye movement, sleep behavior disorder; bruxism; and circadian rhythm sleep disorders. The use of artificial light has substantially altered humanity's sleep patterns.

The Science behind Sleep: An internal "body clock" regulates your sleep cycle, controlling when you feel tired and ready for bed or refreshed and alert. This clock operates on a 24-hour cycle known as the circadian rhythm. After waking up from sleep, you'll become increasingly tired throughout the day. These feelings will peak in the evening leading up to bedtime.

This sleep drive, also known as sleep-wake homeostasis, may be linked to adenosine, an organic compound produced in the brain. Adenosine levels increase throughout the day as you become more tired, and then the body breaks down this compound during sleep.

Sleep is an essential function that allows your body and mind to recharge, leaving you refreshed and alert when you wake up. Healthy sleep also helps the body remain healthy and stave off diseases. Without enough sleep, the brain cannot function properly& can impair your abilities to concentrate, think clearly, and process memories.

Stages of Sleep: Once we fall asleep, our bodies follow a sleep cycle divided into four stages. The first three stages are non-rapid eye movement (NREM) sleep, and the final stage is rapid eye movement (REM) sleep.

Stage 1 NREM: This first stage marks the transition between wakefulness and sleep and consists of light sleep. Muscles relax, and your heart rate, breathing, and eye movements begin to slow down, as do your brain waves, which are more active when you are awake. Stage 1 typically lasts several minutes.

Stage 2 NREM: This second NREM sleep stage is characterized by deeper sleep as your heart rate and breathing rates continue slowing down, and the muscles become more relaxed. Eye movements will cease, and your body temperature will decrease. Brain waves also remain slow from some brief moments of higher frequency electrical activity. Stage 2 is typically the longest of the four sleep stages.

Stage 3 NREM: This stage plays a vital role in making you feel refreshed and alert the next day. Heartbeat, breathing, and brain wave activity all reach their lowest levels, and the muscles are as relaxed as they will be. This stage will be longer at first and decrease throughout the night.

REM: The first REM stage will occur about 90 minutes after falling asleep. Your eyes will move

back and forth rather quickly under your eyelids, as the name suggests. Breathing rate, heart rate, and blood pressure will begin to increase. Dreaming will typically occur during REM sleep, and your arms and legs will become paralyzed – it's believed this is intended to prevent you from physically acting out on your dreams. The duration of each REM sleep cycle increases as the night progresses. The duration of the REM stage will decrease as you age, causing you to spend more time in the NREM stages.

These four stages will repeat cyclically throughout the night until you wake up. For most people, the duration of each cycle will last about 90-120 minutes. NREM sleep constitutes about 75% to 80% of each cycle. You may also wake up briefly during the night but not remember the next day. These episodes are known as the "W" stages. Factors affecting sleep: Pain, Anxiety, and Other Medical Conditions A wide range of medical and psychological conditions can impact the structure and distribution of sleep. These conditions include arthritis causes chronic pain; other Medical conditions include discomfort caused by gastroesophageal reflux disease, premenstrual syndrome, and many others. Medications and Other Substances Many common chemicals affect both quantity and quality of sleep. These include caffeine, alcohol, nicotine, antihistamines, and prescription medications, including beta-blockers, alpha-blockers, and antidepressants.

Dozens of prescription drugs used to help control common disease symptoms may have varying effects on sleep. Beta-blockers used to treat high blood pressure, congestive heart failure, glaucoma, and migraines, often cause decreases in REM and slow-wave sleep and are also associated with increased daytime sleepiness. Alpha-blockers also used to treat high blood pressure and prostate conditions, are linked to decreased REM and increased daytime sleepiness. Finally, antidepressants, which can reduce the duration of periods of REM sleep, have unknown long-term effects on sleep as a whole. Some antidepressants, from the class of drugs known as SSRIs, have promoted insomnia. The medications and substances that have been selected in this study are - Medications: Corticosteroids, ACE inhibitors, ARB inhibitors, Beta-blockers, Thyroid hormone replacement, Statins Substances: Nicotine, Caffeine, Alcohol, Marijuana, Other Hard drugs. How do these selected medications and substances affect sleep?[1-3].

Corticosteroids are a class of drugs that lowers inflammation in the body; common cortisone, methylprednisolone, prednisolone, and Deltasone can fatigue the adrenal glands, responsible for regulating stress responses. Unchecked stress leads to an over stimulated mind and an inability to relax so you can fall asleep, leading to both insomnia and nightmares. The common ACE inhibitors are Benazepril (Lotensin), Enalapril (Vasotec), Lisinopril (Prinivil), and ARB inhibitors are a class of drug that reduces Blood pressure. Both the medications have other side effects which might lead to interrupted sleep, such as dry hacking cough; nocturnal leg cramps; achy joints, bones, and muscles; and diarrhea. Beta-blockers are a class of drugs that reduces Blood pressure. The common beta-blockers used, such as metoprolol (Lopressor, Toprol), propranolol (Inderal), sotalol (Betapace), timolol (Timoptic), are known to cause frequent nocturnal arousals and nightmares due to their inhibition of the essential sleep-regulating hormone, melatonin. The commonly used Thyroid hormone replacements Levothyroxin(Levoxyl, Synthroid, and Unithroid) to treat Hypothyroidism causes shortness of breath, extreme tiredness, stomach cramps, heat sensitivity, irritability, mood swings, headache, hyperactivity, etc. which in turn leads to affecting sleep in its consumers. The statins are prescribed to reduce high Cholesterol; the commonly used statins are Atorvastatin, Lovastatin, Rosuvastatin, and Simvastatin (Zocor), which cause muscle pain that can disrupt sleep. Also, some statins are more likely to cause insomnia and nightmares because they are fat-soluble and more easily absorbed by cells, especially across the blood-brain barrier, which exists to keep out potentially damaging chemicals. The commonly used substances such as Nicotine, Caffeine, Alcohol, Marijuana before or during the night will reduce sleep quality [1-12,13].

2. OBJECTIVES

1. To assess the sleep quality in subjects consuming selected medications (Corticosteroids, ACE inhibitors, ARB inhibitors, Beta-blockers, Thyroid hormone replacement, Statins) 2) & Selected substances (Nicotine, Caffeine, Alcohol, Marijuana, Other Hard drugs).
2. To find the prevalence of insomnia among subjects consuming selected medications/ substances in different disease conditions.

3. METHODOLOGY

The study protocol was prepared after an extensive literature search. It included information on the study's needs, objectives, literature review, and methodology. This study was a Prospective, Cross-sectional, survey-based study carried out months (from December 2020 to May 2021).

The study was conducted in Sagar Hospitals, Kumaraswamy Layout, in and around the community of Kumaraswamy Layout, ISRO Layout, Chandra Layout, Nagarbhavi, RPC layout, and Bapuginagar of Bangalore, Karnataka and SNR Government Hospital, Kolar, in and around the community of RTO Nagar, Byregowda layout, Ambedkar layout, Jayanagar, Gulpet, Karangikatte, Vinobha Nagar of Kolar district, Karnataka. Community of Hoskote, Karnataka. Community of Kadiri town and Tanakallu village, Ananthapur district, Andhra Pradesh, Community of Madanapalle, Chittoor district, Andhra Pradesh, and different parts of the states Karnataka and Andhra Pradesh, India. The electronic format of the Pittsburgh Sleep Quality Index (PSQI) questionnaire was circulated via Physical/social media to known contacts, and telephonic interviews were done as and when required. The participants/Patients were enrolled in the study as per the following inclusion and exclusion criteria

Inclusion criteria: Consumer of selected drugs/ substances that have been reported to disrupt sleep

Age group: 18 years onwards (any sex), Resident of India.

Exclusion criteria: Non-respondents and Incomplete details obtained

All patients/Participants information study in detail, and their confirmation was recorded in Electronic format of the Pittsburgh Sleep Quality Index (PSQI) questionnaire (PSQI Author permission was obtained for using of this in our study) after obtaining their voluntary consent form from the participants. Pittsburgh Sleep Quality Index (PSQI) questionnaire: Measures sleep disturbance and usual sleep habits during the prior month, which has 19 items enquiring about Sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications, and daytime dysfunction which includes a scoring key for calculating a patient's seven sub scores, each of which can range from 0 to 3. The subscores are tallied, yielding a "global" score ranging from 0 to 21. A global score of 5 or more indicates poor sleep quality; the higher the score, the worsen the sleep quality.

Used A specially designed data entry format to enter patient demographics such as age, gender, occupation, current medical problems, current medications, allergies (if any), which also included questions about their use of the selected substances for the study currently prescribed drugs. Data were recorded on a pre-designed proforma and managed on an MS Office· Excel sheet. Statistical analysis was performed using the SPSS (Version 20, SPSS Inc., and Chicago,· IL, USA).

4. RESULTS

Out of 502 patients, the distribution of the age category Table 1 showed that 21-30 years of age were more and their mean value is 23±2.11, the age category of 31-40 years led the mean value of 37.83±2.7. The age category of 71-80 years showed the mean value of 74.9±2.38, the age category of 81-90 years showed the mean value of 81.

The distribution of the gender showed (Table 2) that, in the age category of 21-30 years, the Female percentage is 50.9, and the Male was 49.1%. In 31-40 years, the Females were 36.7%, and the Male was 63.3%. The age category of 71-80 years, the Female portion is 54.4, and the Male amount is 45.5. In the age category of 81-90 years, the Female percentage is null, and the Male portion is 100.

The occupation distribution showed that the number of students was more in the age category of 21-30 years (52.3%). In the age category of 31-40 years, working people were more, and the portion is 60.2. In the age category of 71-80 years and 81-90 years, the numbers of people not working currently/retired were more, and the percentage is 54.5 and 100 respectively.

Out of 502 patients in the age category of 21-30 years, the percentage of people with Allergy, Heart problems, High BP, High cholesterol, Thyroid, and no disease are 0.5, 0.5, 0.9, 0.9, 3.2, and 94.1, respectively. In the age category of 31-40 years, the percentage of people with allergies, Heart problems, High BP, High

Table 1. Distribution of the age category of the patients

Age category		What is your age?
11-20	N	30
	Mean + SD	19.26 ± 0.73
21-30	N	220
	Mean + SD	23 ± 2.10
31-40	N	98
	Mean + SD	37.83 ± 2.70
41-50	N	97
	Mean + SD	45.27 ± 2.97
51-60	N	28
	Mean + SD	55.07 ± 2.63
61-70	N	17
	Mean + SD	65.47 ± 3.08
71-80	N	11
	Mean + SD	74.90 ± 2.38
81-90	N	1
	Mean + SD	81.00 ± 0

Table 2. Distribution of the Gender

Age category		N(%)
11-20	Female	14 (46.7)
	Male	16 (53.3)
	Total	100
21-30	Female	112 (50.9)
	Male	108 (49.1)
	Total	220(100)
31-40	Female	36(36.7)
	Male	62(63.3)
	Total	98(100)
41-50	Female	58 (59.2)
	Male	38 (39.2)
	Other	1(1.8)
	Total	97 (100)
51-60	Female	17 (60.7)
	Male	11(39.3)
	Total	28(100)

Age category		N(%)
61-70	Female	9 (52.9)
	Male	8(47.1)
	Total	17(100)
71-80	Female	6 (54.5)
	Male	5(45.5)
	Total	11 (100)
81-90	Male	1(100)

Table 3. Distribution of the occupation of the patient

Age category		N(%)
11-20	Student	28(93.3)
	Working	2(6.7)
	Total	30(100)
21-30	House wife	1(0.5)
	Not working currently	15(16.8)
	Own business	12(5.5)
	Student	115(52.3)
	Working	77(35)
	Total	220(100)
31-40	House wife	14 (14.3)
	Not working currently	6 (6.1)
	Own business	19 (19.4)
	Working	59 (60.2)
	Total	98 (100)
41-50	House wife	33(34)
	Not working currently	11(11.3)
	Own business	25(25.8)
	Working	28(28.9)
	Total	97(100)
51-60	House wife	11(39.3)
	Not working currently	7(25)
	Own business	4(14.3)
	Working	6(21.4)
	Total	28(100)
61-70	House wife	7(41.2)

Age category		N(%)
	Not working currently	7(41.2)
	Own business	2(11.8)
	Working	1(5.9)
	Total	17(100)
71-80	House wife	4(36.4)
	Not working currently	6(54.5)
	Own business	1(9.1)
	Total	11(100)
81-90	Not working	1(100)

Table 4. Distribution of diseases diagnosed

Age category		N (%)
11-20	no	30(100)
21-30	Allergy	1(0.5)
	Heart problems	1(0.5)
	High BP	2(0.9)
	High cholesterol	2(0.9)
	No	207(94.1)
	Thyroid	7(3.2)
	Total	220(100)
31-40	Allergy	9(9.2)
	Heart Problem	9 (9.2)
	High BP	61 (62.2)
	High cholesterol	9 (9.2)
	No	8 (8.2)
	Thyroid	2(2)
	Total	98(100)
41-50	Allergy	22(27)
	Heart Problem	8(8.7)
	High BP	33(34)
	High cholesterol	14(14.4)
	Inflammation	6(6.2)
	No	5(5.2)
	Thyroid	9(9.3)
	Total	97(100)
51-60	Allergy	1(3.6)

Age category		N (%)
	Heart Problem	4(14.3)
	High BP	6(21.4)
	High cholesterol	5(17.9)
	Inflammation	1(3.6)
	No	1(3.6)
	Thyroid	10(35.7)
	Total	28(100)
61-70	Heart Problem	2(11.8)
	High BP	8(47.1)
	High cholesterol	2(11.8)
	Thyroid	5(29.4)
	Total	17(100)
71-80	Heart Problem	1(9.1)
	High BP	5(45.5)
	High cholesterol	2(18.2)
	No	1(9.1)
	Thyroid	1(9.1)
	Total	11(100)
81-90	High Cholesterol	1(100)

Table 5. Distribution of patient medical condition, substances & its PSQ Global scores

Substances	Gender	Disease medications		PSQ global score
Coffee alone	Male	no disease	N	25
			Mean	5.9600
			Std. Deviation	2.95071
		ARB	N	2
			Mean	10.0000
			Std. Deviation	2.82843
		Beta Blockers	N	1
			Mean	17.0000
		Statins	N	1
			Mean	11.0000
	Female	no disease	N	44
			Mean	7.2045
			Std. Deviation	3.80073
		Thyroid Hormone replacement	N	9
			Mean	7.8889
			Std. Deviation	3.14024
		Corticosteroids	N	6
			Mean	12.0000
			Std. Deviation	3.03315
		ACE Inhibitors	N	1
			Mean	13.0000
		ARB	N	4
			Mean	10.0000
			Std. Deviation	4.08248
		Beta Blockers	N	1
			Mean	11.0000
		Statins	N	1
			Mean	14.0000
Tea alone	Male	no disease	N	32
			Mean	6.0625
			Std. Deviation	3.21225
		Corticosteroids	N	1
			Mean	6.0000
		ACE Inhibitors	N	1
			Mean	3.0000
		ARB	N	5

Substances	Gender	Disease medications		PSQ global score
			Mean	9.2000
			Std. Deviation	1.92354
		Statins	N	4
			Mean	11.7500
			Std. Deviation	2.21736
	Female	no disease	N	38
			Mean	6.5526
			Std. Deviation	3.46174
		Thyoid Hormone replacement	N	8
			Mean	10.7500
			Std. Deviation	4.33425
		ARB	N	4
			Mean	11.5000
			Std. Deviation	2.38048
		Beta Blockers	N	2
			Mean	16.0000
			Std. Deviation	.00000
		Statins	N	4
			Mean	12.7500
			Std. Deviation	2.06155
Coffee/Tea with alcohal	Male	no disease	N	11
			Mean	5.5455
			Std. Deviation	2.01810
		Corticosteroids	N	1
			Mean	12.0000
		ARB	N	1
			Mean	8.0000
		Beta Blockers	N	2
			Mean	8.0000
			Std. Deviation	.00000
		Statins	N	4
			Mean	12.7500
			Std. Deviation	2.06155
	Female	no disease	N	8
			Mean	8.5000
			Std. Deviation	3.07060
		Thyoid Hormone replacement	N	5
			Mean	12.6000

Substances	Gender	Disease medications		PSQ global score
			Std. Deviation	4.03733
		ARB	N	3
			Mean	12.3333
			Std. Deviation	2.08167
		Beta Blockers	N	1
			Mean	11.0000
		Statins	N	4
			Mean	14.0000
			Std. Deviation	.81650
Coffe/tea with cigratte	Male	no disease	N	8
			Mean	6.5000
			Std. Deviation	3.46410
		ACE Inhibitors	N	4
			Mean	10.0000
			Std. Deviation	2.58199
		ARB	N	2
			Mean	12.0000
			Std. Deviation	1.41421
		Beta Blockers	N	2
			Mean	10.5000
			Std. Deviation	4.94975
		Statins	N	5
			Mean	12.8000
			Std. Deviation	3.34664
	Female	no disease	N	2
			Mean	11.5000
			Std. Deviation	6.36396
		Thyoid Hormone replacement	N	1
			Mean	9.0000
		Beta Blockers	N	3
			Mean	8.0000
			Std. Deviation	1.00000
Coffe/tea/ cigratte/alcohal/othersubstances	Male	no disease	N	21
			Mean	6.7619
			Std. Deviation	2.89663
		Corticosteroids	N	5
			Mean	14.6000
			Std. Deviation	1.34164

Substances	Gender	Disease medications		PSQ global score
		ACE Inhibitors	N	36
			Mean	11.4722
			Std. Deviation	3.39315
		ARB	N	9
			Mean	13.0000
			Std. Deviation	1.58114
		Beta Blockers	N	26
			Mean	15.5000
			Std. Deviation	3.00998
		Statins	N	7
			Mean	14.2857
			Std. Deviation	2.36039
	Female	no disease	N	12
			Mean	7.4167
			Std. Deviation	5.38446
		Thyoid Hormone replacement	N	2
			Mean	17.0000
			Std. Deviation	.00000
		ARB	N	4
			Mean	13.0000
			Std. Deviation	2.00000
		Beta Blockers	N	2
			Mean	8.5000
			Std. Deviation	.70711
		Statins	N	9
			Mean	13.0000
			Std. Deviation	2.64575
	Other	ARB	N	1
			Mean	9.0000
only coffee/tea	Male	no disease	N	30
			Mean	6.0000
			Std. Deviation	3.59118
		ACE Inhibitors	N	1
			Mean	9.0000
		ARB	N	2
			Mean	11.5000
			Std. Deviation	.70711
	Female	no disease	N	20

Substances	Gender	Disease medications		PSQ global score
			Mean	6.8500
			Std. Deviation	3.16685
		Thyoid Hormone replacement	N	10
			Mean	8.3000
			Std. Deviation	3.49762
		Corticosteroids	N	27
			Mean	12.8889
			Std. Deviation	2.76424
		ACE Inhibitors	N	4
			Mean	10.2500
			Std. Deviation	5.12348
		ARB	N	4
			Mean	12.5000
			Std. Deviation	3.31662
		Beta Blockers	N	5
			Mean	15.6000
			Std. Deviation	3.36155
		Statins	N	3
			Mean	15.3333
			Std. Deviation	1.15470
No habits	Female	no disease	N	1
			Mean	13.0000

Table 6(a). Distribution of PSQI responses of different components

Age category		Average Bed time	Sleep Latency scores(2)	Average wake up time	Number of Hours spent in bed(Average wake up time(3) – Average bed time(2))	Average Number of hours slept	Habitual sleep efficiency calculative results
11-20	N	30	30	30	30	30	30
	Mean	8.1167	1.0667	7.5833	7.9000	6.4000	77.8703
	Std. Deviation	4.71550	1.04826	2.14991	1.37339	2.13913	17.83245
21-30	N	220	220	220	220	220	220
	Mean	8.9750	1.2364	7.8659	7.7295	6.5000	80.4869
	Std. Deviation	4.17243	.95015	1.71056	1.60785	1.59623	14.28418
31-40	N	98	98	98	98	98	98
	Mean	7.7041	1.7041	6.3469	6.0204	5.1939	83.3685
	Std. Deviation	4.69033	.55999	1.28715	2.21978	1.82428	10.15120
41-50	N	97	97	97	97	97	97
	Mean	8.2526	1.5979	6.1186	5.9588	5.0567	82.6239
	Std. Deviation	4.67491	.62349	1.24535	1.96277	1.56104	11.93327
51-60	N	28	28	28	28	28	28
	Mean	10.0714	1.3571	6.6071	7.1429	6.0000	82.7964
	Std. Deviation	3.03594	.48795	1.06595	1.45842	1.23228	12.09205
61-70	N	17	17	17	17	17	17
	Mean	10.7941	1.3529	6.5588	7.4118	6.2059	79.9335
	Std. Deviation	.77174	.93148	.74755	1.50245	1.21268	11.74023
71-80	N	11	11	11	11	11	11
	Mean	10.50	1.2727	6.5909	8.0909	6.2273	73.4609
	Std. Deviation	.89443	.78625	.70065	1.13618	1.34840	13.17657
81-90	N	1	1	1	1	1	1
	Mean	11.5000	2.0000	4.5000	5.0000	4.5000	90.0000

Table 6(b). Distribution of PSQI scores of various components

Age category		Component 4 Habitual sleep efficiency scores	Component 3 Sleep duration scores	Scores for cannot sleep with in 30 minutes(5a)	Sum of 2 & 5a	Component 2 Scores for sum of 2 &5a
11-20	N	30	30	30	30	30
	Mean	1.1000	1.4000	.8333	1.9000	1.1667
	Std. Deviation	1.15520	1.19193	1.08543	1.82606	1.05318
21-30	N	220	220	220	220	220
	Mean	.9636	1.1000	1.3136	2.5500	1.4818
	Std. Deviation	1.01520	1.08076	1.18468	1.83379	.97205
31-40	N	98	98	98	98	98
	Mean	.7041	2.0000	2.2245	3.9286	2.3061
	Std. Deviation	.97610	1.10295	.98996	1.34126	.75174
41-50	N	97	97	97	97	97
	Mean	.6907	2.0825	1.9897	3.5670	2.0928
	Std. Deviation	.93942	1.04752	1.02566	1.54722	.83019
51-60	N	28	28	28	28	28
	Mean	.7857	1.5000	1.7857	3.1429	1.8929
	Std. Deviation	1.03126	.96225	1.10075	1.50835	.87514
61-70	N	17	17	17	17	17
	Mean	1.0588	1.4118	1.8824	3.1765	1.9412
	Std. Deviation	1.02899	.93934	1.21873	1.94407	1.02899
71-80	N	11	11	11	11	11
	Mean	1.6364	1.4545	1.1818	2.4545	1.6364
	Std. Deviation	1.20605	1.03573	1.32802	1.63485	.80904
81-90	N	1	1	1	1	1
	Mean	.0000	3.0000	3.0000	5.0000	3.0000

Table 6(c). Distribution of PSQI Response of different components

Age category		5b score	5c score	5d score	5e score	5f score	5g score	5h score	5i score	5j score
11-20	N	30	30	30	30	30	30	30	30	30
	Mean	1.2000	.8667	.3000	.2667	.7000	.6667	.8667	.4667	.0000
	SD	1.09545	1.00801	.59596	.44978	1.02217	.99424	1.10589	.77608	.00000
21-30	N	220	220	220	220	220	220	220	220	220
	Mean	1.3955	1.1818	.4455	.3455	.4227	1.1000	1.0455	.6273	.0000
	SD	1.18706	1.14821	.85567	.70790	.80434	1.15431	1.02379	1.02355	.00000
31-40	N	98	98	98	98	98	98	98	98	98
	Mean	1.6531	1.0000	1.6939	1.8061	.8980	1.1735	1.3571	1.5510	.0000
	SD	.70495	1.15767	.98868	1.11834	1.17964	1.15790	1.30226	.83878	.00000
41-50	N	97	97	97	97	97	97	97	97	97
	Mean	1.5876	1.4124	1.3196	1.3093	.8660	1.3505	1.1959	1.5773	.0000
	SD	.76038	1.15247	1.02618	1.17580	1.16930	1.25865	1.18708	.77507	.00000
51-60	N	28	28	28	28	28	28	28	28	28
	Mean	1.9643	1.8571	1.1071	1.5714	1.3929	1.0714	1.7500	1.8929	.0000
	SD	.96156	.75593	1.06595	1.06904	1.28638	1.30323	1.00462	.83174	.00000
61-70	N	17	17	17	17	17	17	17	17	17
	Mean	1.5294	2.1176	1.4706	1.8824	1.8235	.7647	1.8824	2.0000	.0000
	SD	.94324	.92752	1.32842	1.05370	1.38000	1.20049	1.05370	1.11803	.00000
71-80	N	11	11	11	11	11	11	11	11	11
	Mean	2.1818	2.3636	1.0909	2.0909	2.2727	.9091	1.9091	2.2727	.0000
	SD	.98165	1.02691	1.22103	1.13618	1.27208	1.04447	.94388	.78625	.00000
81-90	N	1	1	1	1	1	1	1	1	1
	Mean	3.0000	3.0000	3.0000	3.0000	3.0000	.0000	3.0000	3.0000	.0000

Table 6(d). Distribution of PSQI Response of different components

Age category		Sum of 5b to 5j	Component 5scores for sum of 5b to 5j	Component 1 overall sleep quality score	Component 6 use of sleep medication score	Scores for day time dysfunction	Scores for day time dysfunction in enthusiasm
11-20	N	30	30	30	30	30	30
	Mean	5.3333	.9667	.8667	.0333	.5333	.8667
	SD	3.36650	.41384	.77608	.18257	.93710	1.10589
21-30	N	220	220	220	220	220	220
	Mean	6.5636	1.1545	1.0409	.1727	.5773	1.0500
	SD	5.02328	.61468	.76041	.52096	.94528	.98029
31-40	N	98	98	98	98	98	98
	Mean	11.1327	1.6735	2.1224	1.7245	1.7551	1.9898
	SD	4.77674	.70015	.78995	.95010	.90885	.80584
41-50	N	97	97	97	97	97	97
	Mean	10.6186	1.7113	1.9485	1.3814	1.4639	1.7010
	SD	4.36235	.61167	.76881	1.00461	1.00064	.97002
51-60	N	28	28	28	28	28	28
	Mean	12.6071	1.8929	1.8929	1.1071	1.0357	1.2500
	SD	4.27169	.56695	.68526	.91649	1.10494	.96705
61-70	N	17	17	17	17	17	17
	Mean	13.4706	2.0588	1.9412	1.1176	1.2353	1.2941
	SD	5.69120	.74755	.82694	1.11144	.90342	1.10480
71-80	N	11	11	11	11	11	11
	Mean	15.0909	2.1818	1.8182	1.5455	1.4545	1.6364
	SD	5.57592	.75076	.98165	.93420	.82020	.80904
81-90	N	1	1	1	1	1	1
	Mean	21.0000	3.0000	3.0000	3.0000	3.0000	1.0000

Table 7. Distribution of PSQI scores

Age category		Sum of 8 & 9	Component 7scores for sum of 8 & 9	PSQI Global score
11-20	N	30	30	30
	Mean	1.4000	.9000	6.4333
	SD	1.54474	.88474	3.80275
21-30	N	220	220	220
	Mean	1.6364	1.0409	6.9545
	SD	1.59753	.86703	3.74748
31-40	N	98	98	98
	Mean	3.7449	2.0204	12.5510
	SD	1.56845	.83702	3.28421
41-50	N	97	97	97
	Mean	3.1649	1.7320	11.6392
	SD	1.85225	.97378	3.78094
51-60	N	28	28	28
	Mean	2.3214	1.3571	10.4286
	SD	1.84699	1.02611	3.75577
61-70	N	17	17	17
	Mean	2.5294	1.4118	10.9412
	SD	1.87475	.93934	4.42254
71-80	N	11	11	11
	Mean	3.0909	1.7273	12.0000
	SD	1.37510	.78625	3.60555
81-90	N	1	1	1
	Mean	4.0000	2.0000	17.0000

Table 8. Distribution of roommate or bed partner how often in the past month response for various PSQ Domains

Age category		Loud snoring N(%)	leg twitching or jerking while sleeping N(%)	Episodes of disorientation or confusion during sleep from past one month
11-20	less than once a week	3(10)	1(3.3)	0
	no	21(70)	21(70)	21(70)
	not during the past month	5(16.7)	3(10)	8(26.7)
	Once or twice a week	0	3(10)	0
	three or more times a week	1(3.3)	2(6.7)	1(3.3)
	Total	30(100)	30(100)	30(100)
21-30	less than once a week	8(3.6)	12(5.5)	17(7.8)
	no	149(67.8)	148(67.3)	148(67.3)
	not during the past month	115(52.3)	39(17.7)	41(18.6)
	once or twice a week	77(35)	14(64.4)	9(4.1)
	three or more times a week	5(2.3)	7(3.2)	5(2.3)
	Total	220(100)	220(100)	220(100)
31-40	less than once a week	15 (15.3)	10(10.2)	21(21.4)
	no	49 (50)	49(50)	49(50)
	not during the past month	21 (21.4)	28(28.6)	13(13.3)
	once or twice a week	10 (10.2)	8(8.2)	10(10.2)
	three or more times a week	3 (3.1)	3(3.1)	5(5.1)
	Total	98(100)	98(100)	98(100)
41-50	less than once a week	25(25.8)	10(10.3)	20(20.6)
	no	32(33)	32(33)	32(33)
	not during the past month	15(15.5)	45(46.4)	27(27.8)
	once or twice a week	19(19.6)	4(4.1)	13(13.4)
	three or more times a week	6(6.2)	6(6.2)	5(5.2)
	Total	97(100)	97(100)	97(100)
51-60	less than once a week	10(35.7)	5(17.9)	3(10.7)
	no	4(14.3)	4(14.3)	4(14.3)
	not during the past month	3(10.7)	14(50)	11(39.3)
	once or twice a week	8(28.6)	1(3.6)	8(28.6)
	three or more times a week	3(10.7)	4(14.3)	2(7.1)
	Total	28(100)	28(100)	28(100)
61-70	less than once a week	6(35.3)	1(5.9)	2(11.8)
	no	8(47.1)	8(47.1)	8(47.1)
	Not during the past month	0	0	4(23.5)
	once or twice a week	1(5.9)	1(5.9)	1(5.9)

Age category		Loud snoring N(%)	leg twitching or jerking while sleeping N(%)	Episodes of disorientation or confusion during sleep from past one month
	three or more times a week	2(11.8)	1(5.9)	2(11.8)
	Total	17(100)	17(100)	17(100)
71-80	Less than one week	0	1(9.1)	0
	no	7(63.6)	7(63.6)	7(63.6)
	Not during the past month	0	2(18.2)	3(27.3)
	once or twice a week	2(18.2)	0	1(9.1)
	three or more times a week	2(18.2)	1(9.1)	0
	Total	11(100)	11(100)	11(100)
81-90	no	1(100)	--	1(100)

cholesterol, Thyroid, and no disease are 9.2, 9.2, 62.2, 9.2,2.0 and 8.2, respectively. In the age category of 71-80 years, the percentage of people with Heart problems, High BP, High cholesterol, Thyroid, and no disease are 9.1, 45.5, 18.2,18.2 and 9.1, respectively. In the age category of 81-90 years, the percentage of people with High cholesterol is 100.

Out of 502 patients, In Males, the mean values for the people consuming Coffee alone with medications such as; ARB inhibitors, Beta-blockers, and Statins are 10±2.82, 17 and 11, respectively. In Females, the mean values for the people consuming Coffee alone with medications such as; Thyroid hormone replacements, Corticosteroids, ACE inhibitors, ARB inhibitors, Beta-blockers, and Statins are 7.8±3.14, 12±3.03, 13, 10±4.08, 11, and 14. In Males, the mean values for the people consuming Tea alone with medications such as; Corticosteroids, ACE inhibitors, ARB inhibitors, and Statins are 6, 3, 9.2±1.92, and 11.75±2.21, respectively. In Females, the mean values for the people consuming Tea alone with medications such as; Thyroid hormone replacements, Corticosteroids, ARB. ACE Inhibitors, Beta-blockers, and Statins are 10.75±4.33, 11.5±2.38, 16, and 12.75±2.06, respectively. In Males, the mean values for the people consuming Coffee or Tea with Alcohol with medications such as; Corticosteroids, ARB inhibitors, Beta-blockers, and Statins are 12, 8, 8, and 12.75±2.06, respectively. In Females, the mean values for the people consuming Coffee or Tea with Alcohol with medications such as; Thyroid hormone replacements, ARB inhibitors, Beta-blockers, and Statins are 12.6±4.03, 12.33±2.08, 11, and 14, respectively. In Males, the mean values for the people consuming Coffee or Tea with Cigarette with medications such as; ACE inhibitors, ARB inhibitors, Beta-blockers, and Statins are 10±2.58, 12±1.41, 10±4.94, and 12.80±3.34, respectively. In Females, the mean values for the people consuming Coffee or Tea with Cigarettes with medications such as; Thyroid hormone replacements and Beta-blockers are nine and 8±1, respectively. In Males, the mean values for the people consuming Coffee or Tea or Cigarette or Alcohol, or other substances with medications such as; Corticosteroids, ACE inhibitors, ARB inhibitors, Beta-blockers, and Statins are 14.6±1.34, 11.47±3.39, 13±1.58, 15.5±3, and 14.28±2.36, respectively. In Females, the mean values for the people consuming Coffee or Tea, Cigarette Alcohol, or other substances with medications such as; Thyroid hormone replacements, ARB inhibitors, Beta-blockers, and Statins are 17, 13±2, 8.5, and 13±2.64, respectively. In Males, the mean values for the people consuming Only Coffee or Tea with medications such as; ACE inhibitors and ARB inhibitors are 9 and 2, respectively. In Females, the mean values for the people consuming Only Coffee or Tea with medications such as; Thyroid hormone replacements, Corticosteroids, ACE inhibitors, ARB inhibitors, Beta-blockers, and Statins are 8.3±3.49, 12.88±2.76, 10.25±5.12, 12.5±3.31, 15.6±3.36 and 15.33±1.15, respectively.

Out of 502 patients, in the age category of 21-30 years, the average bedtime mean value is 8.97±4.17, the mean value for sleep latency scores (2) is 1.23±0.95, average wake up time mean value is 7.86±1.71, the mean value for the number of hours spent in bed is 7.72±1.60, the mean value for the average number of hours slept is 6.5±1.59, and the mean value for Habitual sleep efficiency is 80.48±14.28. In the age category of 31-40 years, the average bedtime mean value is 7.70±4.69, the mean value for sleep latency scores(2) is 1.70±0.55, average wake up time mean value is 6.34±1.28, the mean value for the number of hours spent in bed is 6.02±2.21, the mean value for the average number of hours slept is 5.19±1.82, and the mean value for Habitual sleep efficiency is 83.36±10.15. In the age category of 71-80 years, the average bedtime mean value is 10.50±0.89, the mean value for sleep latency scores(2) is 1.27±0.78, average wake up time mean value is 6.59±0.70, the mean value for the number of hours spent in bed is 8.09±1.13, the mean value for the average number of hours slept is 6.22±1.34, and the mean value for Habitual sleep efficiency is 73.46±13.17. In the age category of 31-40 years, the average bedtime mean value is 11.5, the mean value for sleep latency scores(2) is 2, average wake up time mean value is 4.5, the mean value for the number of hours spent in bed is 5, the mean value for the average number of hours slept is 4.5, and the mean value for Habitual sleep efficiency is 90.

Out of 502 patients, in the age category of 21-30 years, the mean value for habitual sleep efficiency scores is 0.96±1.01, the mean value for the sleep duration scores is 1.10±1.08, the mean value for the people who cannot sleep within 30 minutes(5a) is 1.31±1.18, the mean value for the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 2.55±1.83, and the mean value for the component score two

that is the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 1.48±0.97. In the age category of 31-40 years, the mean value for habitual sleep efficiency scores is 0.70±0.97, the mean value for the sleep duration scores is 2±1.10, the mean value for the people who cannot sleep within 30 minutes(5a) is 2.22±0.98, the mean value for the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 3.92±1.34 and the mean value for the component score two that is the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 2.3±0.75. In the age category of 71-80 years, the mean value for habitual sleep efficiency scores is 1.63±1.20, the mean value for the sleep duration scores is 1.45±1.03, the mean value for the people who cannot sleep within 30 minutes(5a) is 1.18±1.32, the mean value for the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 2.45±1.63 and the mean value for the component score two that is the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 1.63±0.80. In the age category of 81-90 years, the mean value for habitual sleep efficiency scores is 0, the mean value for the sleep duration scores is 3, the mean value for the people who cannot sleep within 30 minutes(5a) is 3, the mean value for the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is five and the mean value for the component score two that is the sum of sleep latency scores(2) and cannot sleep within 30 minutes(5a) is 3

Out of 502 patients, in the age category of 21-30 years, the mean values for wake up in the middle of the night or early morning(5b), have to get up to use the bathroom(5c), cannot breathe comfortably(5d), cough or snore loudly(5e), feel too cold(5f), feel too hot(5g), had bad dreams(5h), have pain(5i), other reasons(5j) are 1.39±1.18, 1.18±1.14, 0.44±0.85, 0.34±0.70, 0.42±0.80, 1.10±1.15, 1.04±1.02, 0.62±1.02 and 0 respectively. In the age category 31-40 years the mean values for 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i and 5j are 1.65±0.70, 1±1.15, 1.69±0.98, 1.80±1.11, 0.89±1.17, 1.17±1.15, 1.35±1.30, 1.55±0.83 and 0 respectively. In the age category 71-80 years the mean values for 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i and 5j are 2.18±0.98, 2.36±1.02, 1.09±1.22, 2.09±1.13, 2.27±1.27, 0.90±1.04, 1.90±0.94, 2.27±0.78 and 0 respectively. In the age category of 81-90 years the mean values for 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i and 5j are 3, 3, 3, 3, 3, 0, 3, 3, and 0 respectively.

Table 6(d) in the age category of 21-30 years, the mean value for the sum of wake up in the middle of the night or early morning(5b) to Others (5j) is 6.56±5.02, the mean value for Component 5 that is the sum of 5b to 5j scores is 1.15±0.61, the mean value for the Component 1 that is Overall sleep quality score is 1.04±0.76, the mean value for Component 6 that is the use of sleep medication score is 0.17±0.52 and mean values for the scores of daytime dysfunction and daytime dysfunction in enthusiasm are 0.57±0.94 and 1.05±0.98 respectively. In the age category of 31-40 years, the mean value for the sum of 5b to 5j is 11.13±4.77, the mean value for Component 5 that is the sum of 5b to 5j scores is 1.67±0.70, the mean value for the Component 1 that is Overall sleep quality score is 2.12±0.78, the mean value for Component 6 that is the use of sleep medication score is 1.72±0.95 and mean values for the scores of daytime dysfunction and daytime dysfunction in enthusiasm are 1.75±0.90 and 1.98±0.80 respectively. In the age category of 71-80 years, the mean value for the sum of 5b to 5j is 15.09±5.57, the mean value for Component 5 that is the sum of 5b to 5j scores is 2.18±0.75, the mean value for the Component 1 that is Overall sleep quality score is 1.81±0.98, the mean value for Component 6 that is the use of sleep medication score is 1.54±0.93 and mean values for the scores of daytime dysfunction and daytime dysfunction in enthusiasm are 1.45±0.82 and 1.63±0.80 respectively. In the age category of 81-90 years, the mean value for the sum of 5b to 5j is 21, the mean value for Component 5 that is the sum of 5b to 5j scores is 3, the mean value for the Component 1 that is Overall sleep quality score is 3, the mean value for Component 6 that is the use of sleep medication score is three and mean values for the scores of daytime dysfunction and daytime dysfunction in enthusiasm are 3 and 1 respectively.

Table 7 showed in the age category of 21-30 years, the mean value for the sum of Day time dysfunction (8) and Day time dysfunction to keep up enough enthusiasm (9) is 1.63±1.59, the mean value for Component 7 that is the sum of Day time dysfunction (8) and Day time dysfunction to keep up enough enthusiasm (9) scores is 1.04±0.86, and the mean value for PSQI global score is 6.9±3.7. In the age category of 31-40 years, the mean value for the sum of 8 and 9 is 3.74±1.56, the mean value for component 7 is the sum of 8 and 9 scores is 1.04±0.86, and the mean value for the PSQI global score is 6.95±3.47. In the age category of 71-80, the mean value for the sum of 8 and 9 is

3.09±1.37, the mean value for component 7 is the sum of 8 and 9 scores is 1.72±0.78, and the mean value for the PSQI global score is 12±3.60. In the age category of 81-90 years, the mean value for the sum of 8 and 9 is 4, the mean value for component 7 is the sum of 8 and 9 scores is two, and the mean value for the PSQI global score is 17.

Among 502 patients, in the age category of 21-30 years showed that the percentage of people who have had loud snoring less than once a week, not during the past month, once or twice a week, and three or more times a week are 3.6,23.2, 3.2 and 2.3 respectively. The age category of 31-40 years showed that the percentage of people who have had loud snoring less than once a week, not during the past month, once or twice a week, and three or more times a week are 15.3, 21.4, 10.2 and 3.1 respectively. In the age category of 71-80 years showed that the percentage of people who have had loud snoring once or twice a week and three or more times a week are 18.2 and 18.2, respectively.

Out of 502 patients, in the age category of 21-30 years showed that the percentage of people who have had legs twitching or jerking while you sleep less than once a week, not during the past month, once or twice a week, and three or more times a week are 5, 17.7, 6.4and 3.2 respectively. The age category of 31-40 years showed that the percentage of people who have had legs twitching or jerking while you sleep less than once a week, not during the past month, once or twice a week, and three or more times a week are 10.2, 28.6, 8.2 and 3.1 respectively. The age category of 71-80 years showed that the percentage of people who have had legs twitching or jerking while they sleep less than once a week, not during the past month, and three or more times a week are 9.1, 18.2, and 9.1 respectively.

Beyond 502 patients, the age category of 21-30 years showed that the percentage of people who have had episodes of disorientation or confusion during sleep less than once a week, not during the past month, once or twice a week, and three or more times a week are 7.3, 18.6, 4.1 and 2.3 respectively. The age category of 31-40 years showed that the percentage of people who have had episodes of disorientation or confusion during sleep less than once a week, not during the past month, once or twice a week, and three or more times a week are 21.4, 13.3, 10.2 and 5.1 respectively. the age category of 71-80 years showed that the percentage of people who have had episodes of disorientation or confusion during sleep less than once a week, not during the past month, and once or twice a week are 27.3 and 9.1, respectively

5. DISCUSSION

Out of 502 patients, the distribution of age category showed that the number of people in the age category 21-30, 31- 40, 71-80, and 81-90 years are 220, 98, 11, and 1, respectively. The distribution of the gender showed that in the age category of 21-30 years the females are more in number compared to males, in the age category of 31-40 years the males are more in number than males, in the age category of 71-80 years the females are more in number compared to males and in the age category of 81-90 years only one male patient is present. The distribution of the patients' occupations showed that in the age category 21-30 years, the students are more than others. In the age category 31-40 years, the working people are more than others. In the age category 71-80 and 81-90 years, the currently working people are more than others. The age category of 21-30 years showed that the frequency of people with no disease is more than the people with other diseases. The age category of 31-40 years showed that people with High BP are more than people with other diseases. The age category of 71-80 years showed that people with High BP are more than the people with other diseases. The age category of 81-90 years showed only one person with high cholesterol is present. The distribution of patients' habits and medical conditions showed that in males, the number of people consuming coffee alone with ARB inhibitor is more than taking other medications; in females, the number of people drinking coffee alone with thyroid hormone replacements is more than accepting other drugs. In males, the number of people consuming tea alone with ARB inhibitor is more than taking other medications; in females, the number of people drinking tea alone with thyroid hormone replacements is more than accepting other drugs. In males, the number of people consuming coffee/tea and alcohol with statins is more than taking other medications. In females, the number of people drinking coffee/tea with alcohol and thyroid hormone replacements is more than taking other medications. In males, the number of people consuming coffee/tea and cigarette with statins is more than accepting other drugs. In females, the number of people

drinking coffee/tea with a cigarette with Beta-blockers is more than taking other medications. In males, the number of people sipping coffee/tea/cigarette/alcohol/ other substances with ACE inhibitors is more than accepting other drugs. In females, the number of people drinking coffee/tea/cigarette/alcohol/other substances with statins is more than taking other medications. In males, the number of people consuming only coffee/tea with ARB inhibitor is more than accepting other medicines. In females, the number of people drinking tea alone with corticosteroids is more than taking other medications.

The mean subjective sleep quality scores among the people in the age category below 30 years are 0.92±0.7; this shows a relatively good quality of sleep because they don't have a socio-economic burden on them will be less than other age categories. Between 30-60 years, the age category is 1.93±0.66; this shows pretty good to bad quality of sleep because of the more responsibilities. The age category above 60 years is 2.23±0.76; this indicates a reasonably lousy quality of sleep because they have a more socio-economic burden. The mean sleep latency scores among the people in the age category below 30 years are 1.25±0.97(score of 1-2); this shows a pretty good quality of sleep. The age category between 30-60 years is 2.03±0.76 (score of 3-4). This indicates a relatively bad quality of sleep. The age category above 60 years is 2.16±0.60(score of 3-4), which shows a rather lousy sleep quality. The mean sleep duration scores among the people in the age category below 30 years are 1.25±1.08(6-7 hours); this shows a pretty good quality of sleep. The age category between 30-60 years is 1.83±1.03(5-6 hours); this indicates a relatively lousy quality of sleep. The age category above 60 years is 1.93±0.65(5-6 hours), which shows a somewhat horrible sleep quality. The mean habitual sleep efficiency scores among the people in the age category below 30 years are 1.03±1.08(75-84%). This shows a reasonably good quality of sleep. The age category between 30-60 years is 0.72±0.97(75-84%); this indicates a relatively good quality of sleep. The age category above 60 years is 0.89±0.74(75-84%), which shows a reasonably good sleep quality. The mean sleep disturbances scores among the people in the age category below 30 years are 1.05±0.61(score of 1-9). This shows a relatively good quality of sleep.

The age category between 30-60 years is 1.75±0.62 (score of 10-18.4); this shows a pretty bad sleep quality. The age category above 60 years is 2.14±0.49 (score of 10-18.4); this indicates a reasonably lousy quality of sleep. The mean use of sleeping medication scores among the people in the age category below 30 years is 0.25±0.35(not during the past month). This shows an excellent quality of sleep. The age category between 30-60 years is 1.4±0.95(less than once a week). This offers a pretty good quality of sleep. The age category above 60 years is 1.88±0.68(once or twice a week), indicating a relatively lousy sleep quality. The mean daytime dysfunction scores among the people in the age category below 30 years are 0.97±0.87(score of 1-2). This shows a reasonably good quality of sleep. The age category between 30-60 years is 1.7±0.94(score of 3-4). This shows a relatively bad quality of sleep. The age category above 60 years is 1.71±0.57(score of 3-4), which offers a reasonably lousy sleep quality. The responses from the roommate or bed partner about them say that in below 30 years age category the patient has had loud snoring not during the past month(19.95%), in the age category between 30-60 years says that the patient has had loud snoring less than once a week(25.6%), in the age category above 60 years says that the patient has had loud snoring three or more times a week(15%). The responses from the roommate or bed partner about them say that in below 30 years age category the patient has had long pauses between breathes while asleep not during the past month(24.15%), in the age category between 30-60 years says that the patient has had long pauses between breaths while asleep less than once a week(22.03%), in the age category above 60 years says that the patient has had long breaks between breathes while asleep not during the past month(26.75%). The responses from the roommate or bed partner about them say that in the below 30 years age category, the patient has had legs twitching or jerking. At the same time, you sleep not during the past month(13.85%), in the age category between 30-60 years says that the patient has had legs twitching or jerking while you sleep not during the past month(41.66%), in the age category above 60 years says that the patient has had legs twitching or jerking while you sleep not during the past month (26.75%).

The responses from the roommate or bed partner about them say that in below 30 years age category the patient has had episodes of disorientation or confusion not during the past month(22.65%), in the age category between 30-60 years says that the patient has had episodes of disorientation or confusion not during the past month(26.8%), in the age category above 60 years says that the patient has had bouts of disorientation or confusion(25.4%). The PSQI global score, in the age category below 30 years showed that the sleep quality was very mildly disturbed (6.65±3.77), in the age category between 30-60 years showed that the sleep quality is little worse or disturbed(11.51±3.60) and in the age category above 60 years showed that the sleep quality is worse or concerned than the other two age groups. Further studies by Maurice MOhayon, Salvatore Smirne [14] showed that the use of anxiolytics showed a 5.7% enhancement in the sleeping pattern. The middle-aged drivers were dissatisfied with their sleeping patterns, which resulted in road accidents. The reports from the other study, Yanhui Liao et al. & Karnik R et al [13,15], showed that smokers were reported to sleep disturbances across all different age categories with numerous dimensions of sleep quality - subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency. our study findings showed that below 30 years have sleep quality disturbance very mild when compared with other age groups, and also the usage of medications(Corticosteroids, ACE inhibitors, ARB inhibitors, statins, thyroid hormone replacements, and beta-blockers) and habits influences the sleeping pattern.

6. CONCLUSION

The PSQI global score assessment showed a mild sleep quality disturbance in the age category below 30 years. In contrast, the sleep quality disturbance is moderate in the middle-aged group between 30and 60 years. In the age category above 60 years, the sleep quality disturbance is more than the age mentioned above. The substances (coffee/tea/cigarette/alcohol/other substance) with medications [ARB (Angiotension receptor blocker), Thyroid hormone replacements, ACE inhibitors, Statins, Corticosteroids] showed a decrease in the sleep quality in men compared to women. Hence better to reduce the said substances /avoid maintaining their sleep health when the people have been prescribed these medications.

7. LIMITATIONS

- Less sample size due to the pandemic.
- Responses from the patients/subjects are less due to various reasons.
- Study duration was only six months.

FUTURE DIRECTIONS

- More drugs can be considered to find out the sleep quality.
- Provide education about sleeping patterns studies may help to maintain good health.

ETHICAL APPROVAL AND CONSENT

As per international standard or university standard written ethical approval has been collected from Dayananda Sager University sager hospital and preserved by the author(s).

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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