Study on Poor Sleep Quality And Its Associated Risk Factors Among Elderly Population In Chennai

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Abstract-
Introduction*:Population aging is a major health issue in most countries, sleep is one of the significant factors affecting aging and elderly people's quality of life. The present study was done to assess sleep quality and its contributing factors among elderly people.*

Methods*:This cross-sectional study involving 150 elderly people aged 60 or more was conducted in pudupet,Chennai.Data was collected using structurally formatted online questionnaires prepared in English and translated to Tamil which is modified and taken from previous studies.PQSI and Five point depression scale is calculated.The results which are obtained from the questionnaire, PQSI and five point depression scale was used for statistical analysis in SPSS software.*

Results*:*

There were noteworthy correlations discovered for smoking and caffeine consumption with PSQI score. To be more precise, the prevalence of poor sleep quality was higher in smokers (p=0.04) and people who consume caffeine (p=0.02).

Age(p=0.8039), sex(p=0.6241), marital status(p=0.6947), co morbidity(p=0.8554) and 5 point depression scale score(p=0.8340) do not significantly associate with poor sleep quality

Conclusion*: Prevalence of poor sleep quality among elderly was around 90% and it had significant association with smoking and caffeine intake.*

Keywords- Aging, sleep quality, PSQI

I. INTRODUCTION

Ageing is a natural stage of human life. Population Ageing is a global phenomenon. The number of elderly is increasing across the world and India is no exception. Population of senior citizens presently shares 10% of the total population of India 2036,14.9% of the population of our country will comprise of senior citizens , according to INDIA AGEING REPORT 2023.

Between 2000 and 2015, the global population of individuals aged 60 and above saw a 48% increase, reaching 901 million in 2015. Projections indicate that by 2030, there will be more elderly people than children aged 0-9, with figures of 1.4 billion and 1.3 billion, respectively. Moreover, the number of individuals aged 80 or older is expected to surge from 125 million in 2015 to 434 million by 2050, reflecting a more than threefold rise.[1]

As the elderly population grows, so do the health challenges linked to the aging process. Research indicates that aging is influenced not only by genetic factors but also by lifestyle choices, including sleep habits.[2] Sleep which occupies about one-third of human life, plays a crucial role in restoring physical and mental health. It is a key physiological function vital for maintaining the body's circadian rhythm. Insomnia, characterized by difficulty falling or staying asleep, is common among older adults. When there is no underlying cause, it is categorized as secondary insomnia.[3]

Sleep problems can lead to severe physical and psychological effects, including depression, an increased risk of falls, memory problems, concentration difficulties, irritability, reduced quality of life, fatigue, mood instability, and cognitive decline, such as dementia. Research also highlights that poor sleep can contribute to depression, immune system dysfunction, cardiovascular diseases, and negatively affect various areas of life, including social interactions, work performance, health status, and cognitive abilities such as learning and memory[4,5]

Sleep quality is a complex construct to evaluate empirically, and yet the Pittsburg Sleep Quality Index (PSQI) is commonly used in studies as their only measure of sleep quality.Given the aging population and the impending economic burden associated with increasing numbers of dementia patients there is pressing need to improve sleep quality among older adults.

Previous studies reported different statistics on theprevalence of sleep disorders among elderly people and showed that elderly people have low sleep quality.For instance a study conducted by goutaman in chidambaram,34.8% had their PSQI value<5 which suggest good sleep quality and wherease 65.2% had PSQI ≥5 suggesting poor sleep quality[6]

The objective of the study is to assess the sleep quality among elderly population and to find out the association between selected risk factors and poor quality of sleep

II. METHODS

A community based cross sectional study was conducted in pudupet,Chennai in September 2024.The study involved 150 elderly people,with inclusion criteria encompassing Men and Women more than 60 years of age of residents of pudupet who are willing to participate.Exclusion criteria those who are not willing to participate and ill during interview.

Data was collected from 150 individuals by face to face interview in local language at home of respondent after obtaining consent. Those who were unable to respond to the questions, ill during the interview and those did not give consent were excluded.

Using convenient sampling technique,the study utilized a demographic questionnaire, pittsburg sleep quality index and five point depression scale for data collection.

The collected data were entered into SPSS software (V-22) and analysed using chi-square test at the significance level of less than 0.05.

Ethical considerations were paramount, with approval secured from the Institutional Ethics Committee, and informed consent was obtained from all involved individuals.

III. RESULTS

TABLE 1;
BASELINE DATA

150 People met our inclusion criteria. Out of the sample, 49.3% were females and 50.7% were males. 74% of the sample fell under the age group 60-70 and the rest were above the age of 70. 16.7% were graduated and the rest were not graduated.

Comorbidity details were collected, and they were divided as people with any medical illness or not. 16% were free from comorbidities and the rest had either diabetes or hypertension or any cardiovascular abnormalities. 72% of the sample had history of smoking. Consumption of caffeinated drinks were considered as an entity and in that, 78.7% people consumed some form of caffeine on a regular basis

sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	74	49.3	49.3	49.3
	Male	76	50.7	50.7	100.0
	Total	150	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	>70	39	26.0	26.0	26.0
	60-70	111	74.0	74.0	100.0
	Total	150	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduated	25	16.7	16.7	16.7
	Not Graduated	125	83.3	83.3	100.0
	Total	150	100.0	100.0	

Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	90	60.0	60.0	60.0
	Separated	1	.7	.7	60.7
	Unmarried	3	2.0	2.0	62.7
	Widowed	56	37.3	37.3	100.0
	Total	150	100.0	100.0	

Any medical disease or illness which you have at present

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	24	16.0	16.0	16.0
	Yes	126	84.0	84.0	100.0
	Total	150	100.0	100.0	

Do you smoke cigarettes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	108	72.0	72.0	72.0
	Yes	42	28.0	28.0	100.0
	Total	150	100.0	100.0	

Do you drink caffeinated drinks (e.g. tea, coffee, cola)?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	32	21.3	21.3	21.3
	Yes	118	78.7	78.7	100.0
	Total	150	100.0	100.0	

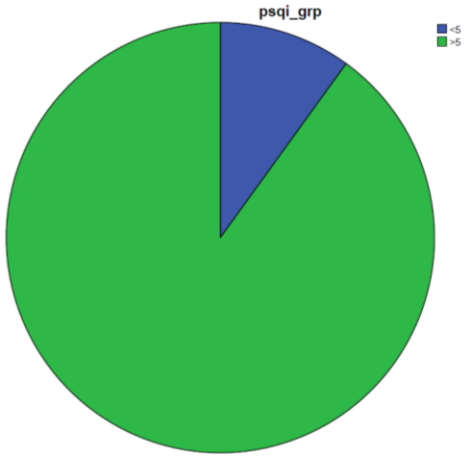
TABLE 2
PSQI SCORE AND 5 POINT DEPRESSION SCALE

From the data collected via questionnaire, PSQI score was calculated for each individual. According to PSQI, score below 5 indicates normal sleep quality and a score above or equal to 5 indicates poor sleep quality. 90% of the population had poor sleep quality.

A 5 point depression score was also calculated. 81.3% of the had mild amount of depression and the rest had severe depression.

psqi_grp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5	15	10.0	10.0	10.0
	>5	135	90.0	90.0	100.0
	Total	150	100.0	100.0	



depr_grp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-3	122	81.3	81.3	81.3
	4-5	28	18.7	18.7	100.0
	Total	150	100.0	100.0	

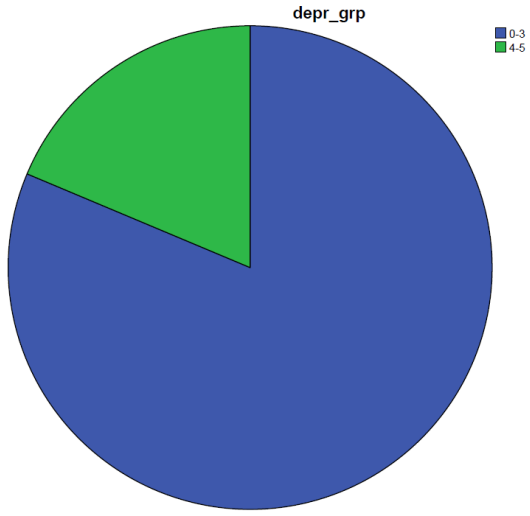


TABLE 3
ASSOCIATION OF VARIABLES WITH PSQI SCORE

There were noteworthy correlations discovered for smoking and caffeine consumption with PSQI score. To be more precise, the prevalence of poor sleep quality was higher in smokers (p=0.04) and people who consume caffeine (p=0.02).

Age(p=0.8039), sex(p=0.6241), marital status(p=0.6947), co morbidity(p=0.8554) and 5 point depression scale score(p=0.8340) do not significantly associate with poor sleep quality

Variable	categories	PSQI< 5	PSQI> 5	P VALUE
AGE	60-70	12	99	0.803985
	>70	3	36	0.803985
SEX	MALE	9	67	0.624175
	FEMALE	6	68	0.624175
MARITAL STATUS	SINGLE	0	3	0.69474
	MARRIED	11	79	0.69474
	DIVORCED	0	1	0.69474
	WIDOWED	4	52	0.69474
SMOKING	YES	4	38	0.04890
	NO	11	97	0.04890
CO MORBID	YES	13	113	0.85543
	NO	2	22	0.85543
CAFFEINE	YES	8	110	0.02835
	NO	7	25	0.02835
5 POINT DEPRESSION	1-3	13	109	0.834019
	4-5	2	26	0.834019

IV. DISCUSSION

This study aimed to assess sleep quality and its contributing factors among elderly people and the association with other factors. In conclusion, this research sheds light on the important connections between our daily habits and sleep quality, particularly highlighting the negative effects of smoking and caffeine. The study found that smokers and those who consume caffeine reported poorer sleep quality, with

significant p-values of 0.04 and 0.02, respectively. This suggests that addressing these lifestyle choices could be key to helping individuals get better sleep.

Interestingly, the study did not find significant links between poor sleep and factors like age, sex, marital status, or even levels of depression. This indicates that while personal habits play a crucial role in our sleep health, other common factors might not have the same influence.

These findings are vital for healthcare professionals and policymakers looking to improve sleep health in the community. By understanding how smoking and caffeine affect sleep, targeted programs can be created to encourage healthier choices that lead to better sleep for many people.

Overall, this research adds to the growing body of knowledge in sleep studies and emphasizes the importance of looking at lifestyle habits when considering sleep quality. With further exploration into these connections, we can develop effective strategies to promote better sleep and, ultimately, a healthier population.

V. CONCLUSION

The finding of their study indicates that elderly population in this area, have a poor sleep quality. The most important factors contributing to their sleep quality are smoking, intake of caffeine, dependency in doing daily activities, other health problems and their habitual sleep efficiency. Therefore, sleep quality among elderly people can be improved through encouraging them to engage in regular physical activity, providing them with counseling services and employing medical and rehabilitative strategies to relieve their health problems.Moreover, in service educations should be provided to health care providers in order to empower them for the accurate diagnosis and effective management of sleep disorder among elderly people.

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Conflict of interest: None declared

VI. LIMITATIONS

The study was conducted at urban area in Chennai, which may limit the generalizability of the findings to other settings as 71% of India's elderly population lives in rural areas while only 29% live in urban areas.Additionally, the sample size of 150 elderly people might not be representative of the entire general elderly population, potentially introducing selection bias. The study also relied on self-reported data from participants, which may be subject to recall bias or social desirability bias, affecting the accuracy of the responses.

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