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Co-occurrence of sleeping difficulties with urbanization and food choice in female university students.

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Abstract:

Introduction: Sleep is a basic and essential need of human beings, large number of sleep related problems are demonstrated in all age groups with different promoting factor(s), these may be biological, social, economical or environmental. Literature is scanty to identify co factors of sleep disturbances in apparently healthy females.

Objective: To analyze association of sleep disorders in females with rural/ urban settings of living and certain dietary habits.

Methodology: A cross sectional /survey-based study was performed in University of Sindh Jamshoro. The sample size (n) was 520. The data comprised of females aged between 18 -26 years. Pittsburgh Sleep Quality Index (PSQI) was employed to assess sleep quality among the participants along with self-structured questionnaire which was used for other variables such as consumption of junk food and its frequency of intake and breakfast intake.

Results: Out of 520 participants, 310 (60%) were living in urban areas shows comparatively higher frequency of poor sleep (n=262,50.5%; p=0.01-odd ratio=2.18) than those who were living in rural setups. Poor sleep was also observed in junk food eaters (n=304, 58%) however no association was observed in pattern of breakfast with sleep.

Conclusion: The study concluded the prevalence of poor sleep was found more in urban female dwellers.

Keywords: sleep, rural, urban, junk food, breakfast, Pittsburgh Sleep Quality Index (PSQI).

Introduction:

Sleep is an important biological need for all living beings in addition to water and food.¹ It is interpreted as a dynamic behavior, merely not the absence of wakefulness, however considered as a special neural activity regulated in a précised manner, it is a simple restfulness either it has own specific concern.²

A healthy human spends 20 to 40 % of the day in sleep and about one third of life span occupied by sleeping, considered one of the essential and basic hu-

man need² even in prehistoric time. Every person has its own sleep requirement but generally it is greatly associated with age, and adapted throughout the life, neonates requires 16 to 18 hours/day of sleep, when they reached toddlers group the need declines to 11 to 12 hours per day, children of school age group and adolescents require minimum a restful sleep of 10 day³; it is not only the time of sleep but also the quality of sleep that plays a crucial role in maintaining healthy life.

Sleeping disorders and sleep insufficiency is commonly occurred problem; adverse consequences associated with poor sleep are stress, various psychiatric issues, neurocognitive malfunctioning, neurodegenerative disease,⁴ obesity, poor life quality, cardiovascular problems, accidents and traumas, depression, suicides, general body aches and increased mortality.⁵⁻⁷ Interrupted sleep have unfavorable impact on physiology and psychology of human. Evidences clearly relate good sleep with memory consolidation.⁸ Vulnerability to sleep insufficiency/difficulties varies by gender, age, ethnicity/race and socioeconomic status of an individual.¹

There are two states of sleep are observed in human and other animals. Rapid eye movement sleep (REM) and Non-Rapid eye movement (NREM) or Slow wave sleep, both states play an important role.⁴ Sleep quality can be determined by observing the amount of both states during one night, these stages occurs alternatively as the night progresses, slow wave sleep is deep and quiet sleep has a greater contribution in restoration of memory.⁹

Generally it is assumed that choice of food and food quality has strong association with the sleep quality, evidence shows that those who takes high energy rich foods/ refined carbohydrates or fats are less sleepers; furthermore the people who takes less than normal sleep tends to have shown irregular meal patterns and consume lesser vegetables¹⁰ additionally research also uncovers that deficit in sleep drives person to take more fat.¹¹ Certain social, physical and environmental factors may contribute in sleep quality and in prevalence of sleeping disorders: sleep apnea, insomnia and circadian cycle disorders. These could be light, air, noise, ambient sounds and circumstantial features belongs to sleeping area¹², physical features could be neighborhood created by humans, urbanization characteristics that may impact to physical activity and life style.¹³

The "Pittsburgh Sleep Quality Index" (PSQI) is the most commonly utilized and dependable sleep quality evaluation tool.² The score of PSQI ranges is from 0 to 21, greater the score poorer is the sleep quality.¹⁴

Objectives:

To determine the overall prevalence of sleeping disorder in female students and its association with urbanization, breaks fast and junk food.

Methodology:

This cross-sectional study (survey based) study was conducted from March 2019 to December 2019. The sample was collected from University of Sindh, Jamshoro, Pakistan. After having consent in a written form, a self-structured questionnaire and "Pittsburgh Sleep Quality Index" (PSQI) questionnaire was distributed to the females to evaluate quality of sleep. The sample comprises of only single and/or unmarried girls. The respondent selected were between 18 to 26 years of age. Those who were less 18 or more than 26 years of age, were excluded from the study. Those who were on any medication were also excluded.

Statistical Analysis:

Data presented as percentages and proportion; n represents the number of females investigated. *p* values were derived by calculating Chi square Test (Yates correction). Odd ratios were calculated.

Results:

Among all 412 (79%) female reported poor quality sleep; among these 262 (63.59%) were from urban areas with an odds ratio of 2.18 and *p* value of 0.0003 as shown in table 1. Overall, the poor sleep was significantly more frequent in urban ($X^2 = 5.74$, *p*-value = 0.01) than rural participant. The relation of sleep quality among junk food eater is shown in table 2. Habit of junk food eating was more prevalent among those reported poor sleep as compared to those reported good sleep. (n=304 vs 72). Although a large proportion of the participants were fond of junk food, the association of junk food with poor sleep was insignificant as shown in table 2. Among 108 participants that reported good sleep, 100 gives history of taking breakfast regularly in contrast to 356 participants having sleep problems and were not taking breakfast as shown in table 3. is considered good to health, generally the tradition.

Discussion:

This cross-sectional study was designed to observe association of sleeping disorders with certain variables; we were unable to determine the significant relationship of sleeping disturbances with skipping of breakfast. Prevalence of sleeping disorders observed significantly high in the participants who belong to urban areas as compared to rural areas inhabitants. The possible main factor behind sleeping disorders could be the urbanization. Moreover, during current

Table. 1: Frequency distribution of participant.

	Good sleep	Poor sleep	Total	Odd ratio	X ²	p-value
Rural	60(11.5%)	150 (28.5%)	210 (40%)			
Urban	48(9.5%)	262 (50.5%)	310 (60%)	2.18	13.03	0.0003
Total	108(21%)	412 (79%)	520 (100%)			

Table. 2: Sleeping quality and habit of junk food.

Junk food eaters	Good sleep	Poor sleep	Total	Odd ratio	X ²	p-value
Yes	72 (14%)	304(58%)	376(72%)			
No	36 (7%)	108(21%)	144(28%)	0.71	2.16	0.1
Total	108 (21%)	412(79%)	520(100%)			

Table. 3: Association of Sleeping disorders with Breakfast habit.

Break Fast	Good sleep	Poor sleep	Total	Odd ratio	X ²	p-value
Yes	100(19%)	356(68%)	456 (88%)			
No	08(2%)	56(11%)	64 (12%)	1.97	3.0	0.08
Total	108(21%)	412(79%)	520 (100%)			

sleep disturbance among people who consumes starchy and oily foods.^{10,15} It is reported in a recent research that ultra-processed foods are greatly associated with anxiety induced sleeping difficulties.¹⁶ Noise pollution, that causes fluctuation in blood pressure may be a factor for sleeping disorder in urban areas.^{17,18} The finding of current study are consistent with the study conducted in Russia which shows same trend and concluded that due to urbanization the many urbanites encounter disturbances in circadian rhythm which include poor sleep, loss of appetite and decreased working capacity.¹⁹ In urban setup tremendous use of social media due to availability of internet may adversely affect sleep habits; in contrast internet facility is not freely available at rural areas. A published study has shown that 96% of youngsters aged between 18 to 30 uses some sort of gadgets among them 67% uses cell phones, 60% computers and 43% of them uses music devices before going to bed at night²⁰ and therefore most young adults are unable to get the recommended sleep of 7-9 hours,²¹ consequently vulnera-

ble to the problems associated with lack of sleep. The results of current study also show that sleep disturbances are more prevalent among urban dwellers; a published study has identified association between short sleep and obesity.²² The cross-sectional design of current study is the limitation and large size study as case control are recommended.

Conclusion:

The study concludes the current prevalence of sleeping disorders and its association with urbanization, breaks fast and junk food in young university female students.

Conflict of Interests:

The authors state that they do not have any financial or ethical conflict of interests and nothing to disclose.

Ethical Approval:

The ethical standards and protocols for current were in accordance to Helsinki Declaration (1964) and its amendment.

Conflict of Interest:

None.

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