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Research Paper

Comparative Study of Sleep Quality between Pre University and Undergraduate Students: Influence of Select Demographic Factors

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ABSTRACT

Present study attempted to compare and find out extent of sleep quality among students studying in Pre University and undergraduate courses. The sample consisted of 400 students studying in Mysore city, pursuing various courses and aged between 18-22 years. They were selected from various Pre University and undergraduate colleges of Mysore city, through simple random sampling. The students answered Pittsburgh Sleep Quality Index (PSQI-1989) scale which measured global sleep quality. Chi-square tests were applied to find out the differences between frequencies of levels of sleep quality and association of demographic factors with sleep quality. Results revealed that an alarming 70.2% of the selected students in the present study had poor sleep quality. Students pursuing pre university courses had better sleep quality than students pursuing undergraduate courses. Students pursuing commerce and arts courses had better sleep quality compared to students pursuing Arts courses. Other factors-gender, domicile and stay did not have significant influence over sleep quality of the students.

Keywords:*Sleep quality, Pre-University, Undergraduate students.*

In the past decade numerous researches have been made on sleep quality around the world. Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, inhibition of nearly all voluntary muscles, and reduced interactions with surroundings. It is an important part of one's daily routine-one spends about one-third of time doing it. Quality sleep – and getting enough of it at the right times -- is as essential to survival as food and water. Without sleep one can't form or maintain the pathways in his/her brain that let you learn and create new memories, and it's harder to concentrate and respond quickly (*"Brain Basics: Understanding Sleep", 2017).*Normal healthy sleep is characterized by sufficient duration, good quality, appropriate timing and regularity, and the absence of sleep disturbances and disorders (Watson et al,2015*).*

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College life comes with many new stressful experiences, with increased freedom, self-responsibility, disorganized lifestyle, variable schedules, repeated deadlines, dormitory living, and social and academic obligations. In order to be able to keep up with these challenges, students neglect sleep by spending the time on late night study sessions, project completion, socialising, accessing internet, and other various activities. In public health domain, quality of sleep acquires a major position. Though enough knowledge on sleep and sleep quality is wide spread, today we are finding many sleep related disorders especially in young adults and aged.

Adolescence is a period in which youngsters have to make choices such as applying for university. The selection process is competitive, and it brings distress and anxiety, risk factors for the appearance of sleep disorders (Rocha, Rossini, & Reimao, 2010). Likewise, College is an important and nurturing ground for professional education. It provides young individuals with the requisite skills for their preferred fields, along with enabling them to support themselves and contribute to their society. But the price paid can be exorbitant. The hectic schedules, towering burden of studies and assignments, and the never ending stress of deadlines dispose individuals to constant self-neglect, not the least of which is compromise on their night-time sleep.

On an average, a young adult needs around 8 hours of sleep per day. Yet majority of the students are sleep deprived, as shown by one study in which 70.6% of the college students reported sleeping less than 8 hours with mean total sleep time being 7.02 hours (Lund, Reider, Whiting & Prichard, 2010). Lack of sleep and drowsiness are exceptionally regular among college going students. College life is also accompanied by social and aggressive college condition that can have both positive and negative effects on a student's wellbeing, stress because of academic accomplishment factors, social weights, detachment from family, and financial concerns. Lack of sleep impacts and affects learning, memory and execution and additionally mental and physiological wellbeing. Studies demonstrate that lack of sleep (under six to seven hours for each day) can prompt a genuine decrease in intellectual execution and psychomotor capacities (lessening of fixation, memory and thinking procedures), daytime dysfunction, expanded rate of driving accidents and reduced academic performances, regularly bringing about poor scores (Voelker, 2004).

Sleep deprivation can have serious side effects on different processes in our body, including endocrine, immunologic, metabolic and cardiovascular. The extents of these effects depend on how severe the sleep deprivation is (Teter, et al, 2006; Buboltz, Brown &Soper, 2001). Reduction in the time spent on sleeping and the quality of sleep across different people has been interlinked towards an increase in work and social status demands, lifestyle change, technology usage increase, regular smoking and drinking, intake of caffeine, change in diet and the various changes in physical activity. (Al-Hazzaa et al., 2012; Calamaro, Mason, & Ratcliffe, 2009; Chokroverty, 2009; McKnight-Eily et al., 2011; Van den Bulck, 2003, 2004; Zhou et al., 2012). This is because studies point that quality of sleep is vital in the emotional and physical growth of the adolescents which have further effects in learning, attention, concentration, and the other various cognitive functions (Friedman, Corley, Hewitt, & Wright, 2009). The increase in negativity of mood and behaviour is rooted from the lack of sleep which hinders their potentials in the ability to think in clarity, concentration in various activities and their performance in school (Dewald, Meijer, Oort, Kerkhof, & Bögels, 2010). There is also an increased risk of accidents and injuries, abuse of drugs and alcohol, slow body metabolism and obesity; which is caused due to lack of good sleep (Passarella &

Duong, 2008). Few studies on sleep quality and other issues have revealed the following. In a recent by D'Souza, Samyukta and Tejaswini (2018), found that internet addiction has significant influence over sleep quality, as the internet addiction increased, sleep quality of the female students decreased significantly. Deeksha and D'Souza (2018), in their study found that salience and neglect social life aspects of internet addiction predicted sleep quality of college students.

The present study is aimed to compare the extent of sleep quality among students pursuing pre university and under graduate education in the city of Mysuru. Due to changes in living style and technology invasion, there is a reduced sleep quality among students. It is hypothesized that students pursuing pre university and under graduate education differ in their sleep quality and few demographic factors significantly influence sleep quality.

Sample:

Students pursuing Pre University and undergraduate courses were selected for the purpose of the study. A total of 400(200 PU and 200 undergraduate) students pursuing their education in Arts, Commerce, and Science were randomly selected from few colleges of cities of Mysore and Bangalore.

Tools employed:

The Pittsburgh Sleep Quality Index (1989)

The Pittsburgh Sleep Quality Index (Buysse, Reynolds, Monk, and Berman PSQI-1989) was used to assess the extent of sleep quality among the sample selected. This scale contains 18-items self-reporting the respondents. The items measure seven components sleep quality, score ranging from 0 (no difficulty) to 3 (severe difficulty) for sleep duration, sleep disturbance, sleep latency, daytime disturbance, habitual sleep efficiency, sleep quality, and use of sleep medications. The total of these provide an index referred to as global sleep quality which ranges from 0 to 21. Reliability measures indicate that the PSQI generally has high internal consistency (α = .80 to .85) and test-retest reliability (r = .85 to .87). It also has acceptable concurrent validity; scores on the PSQI are highly correlated with scores on other subjective measures of sleep quality (r > .69) too.

Procedure:

The second and third authors personally visited few colleges in Mysuru, took the permission from the respective heads of the institution and administered the tool to 400 students. Before administrating the questionnaire, they were assured of confidentiality. They were asked to answer all the questions. The instructions were read out and each item in the questionnaire was explained in case of difficulty in understanding the item/s, in order to get good response. Once the data were collected, they were scored and fed to the computer.

The data were analyzed using chi-square tests.

RESULTS

Table 1 presents the distribution of the respondents on sleep quality by various demographic factors and results of test statistics

Table 1, Distribution of the respondents on sleep quality by various demographic factors and results of test statistics

Variable			Sleep quality		Total	Test statistics	P value
			<5	>5			
Overall		F	119	281	400	X^2= 65.61	P=.001
		%	29.8%	70.2%	100.0%		
Group	Pre university	F	77	123	200	X^2= 14.65	P=.001
		%	38.5%	61.5%	100.0%		
	Undergraduate	F	42	158	200		
		%	24.5%	75.5%	100.0%		
Gender	Male	F	75	168	243	X^2= 0.368	P=.544
		%	30.9%	69.1%	100.0%		
	Female	F	44	113	157		
		%	28.0%	72.0%	100.0%		
Domicile	Urban	F	94	209	303	X^2= 2.654	P=.265
		%	31.0%	69.0%	100.0%		
	Rural	F	16	56	72		
		%	22.2%	77.8%	100.0%		
	Semi-urban	F	9	16	25		
		%	36.0%	64.0%	100.0%		
Course	Arts	F	3	36	39	X^2= 10.01	P=.006
		%	7.7%	92.3%	100.0%		
	Commerce	F	75	161	236		
		%	31.8%	68.2%	100.0%		
	Science	F	41	84	125		
		%	32.8%	67.2%	100.0%		
Stay	Home	F	99	223	322	X^2= 1.193	P=.551
		%	30.7%	69.3%	100.0%		
	Hostel	F	10	24	34		
		%	29.4%	70.6%	100.0%		
	Paying Guest/others	F	10	34	44		
		%	22.7%	77.3%	100.0%		

Overall sleep quality: On the whole we find that a large majority of 70.2% of the selected students expressed poor sleep quality as against only 29.8% of the students expressed healthy sleep quality. Chi-square test revealed a significant difference between frequencies of poor and healthy sleep quality (X^2= 65.61; p=.001), confirming that students suffer from good sleep to a greater extent.

Group and sleep quality: Chi-square test revealed a significant association between groups and sleep quality **(**X^2= 14.65; p=.001), revealing that undergraduate students significantly had lesser sleep quality as compared to pre university students.

Gender and sleep quality: A non-significant association was observed between gender and sleep quality (X^2= 0.368; p=.544), revealing that pattern of sleep quality was same among male and female students.

Domicile and sleep quality: Domicile of the students did not have significant influence over their sleep quality. Chi-square value of 2.654 was found to be non-significant. In other

words, irrespective of the type of domicile the pattern of sleep quality was same for Pre University and undergraduate students.

Course and sleep quality: A significant association was observed between course pursued and sleep quality (X^2= 10.01; p=.006), indicated that students pursuing Arts course had poorest sleep quality compared to students pursuing science and commerce courses.

Stay and sleep quality: A non-significant association was observed between stay and sleep quality (X^2= 1.193; p=.544), revealing that pattern of sleep quality was same among students staying in home, hostel or paying guest facilities.

DISCUSSION

Major findings of the study

- An alarming 70.2% of the selected students in the present study had poor sleep quality.
- Students pursuing pre university courses had better sleep quality than students pursuing undergraduate courses.
- Students pursuing commerce and science courses had better sleep quality compared to students pursuing Arts courses.
- Other factors such as gender, domicile and place of residence did not have a significant influence over sleep quality of the students.

From the above findings it is clear that 70.2% of the people who answered the questionnaire have poor sleep quality. The reasons include reduced or eliminated parental influence and the freedom to self-select bedtime, increased academic demands, economic stresses, and the increased number of hours spent working and/or indulged in extracurricular activities (Millman, 2005). From a recent study conducted by Samyukta and D'Souza (2018), it was found that the 74.8% of the selected students were suffering from lack of decent sleep, and the respondents from the urban area had comparatively higher percentage of poor sleep than the respondents from rural and semi-urban areas. The study also revealed that the respondents who stayed awake till midnight was more affected with poor sleep quality than the respondents who slept earlier. Such respondents furthermore suffer from varied negative side-effects such as their mood, alertness, cognitive functions and their motor activity. Even among students pursuing dental education, it was found that 43.3% of the students had poor sleep quality (D'Souza & Meenakshi, 2018). In Brazil, a study found that 95.3% of the college students sample studied had poor sleep quality (Araújo, et al, 2013).

In a study made on the Croatian young adults, the results show that poor sleep quality is associated with insufficient physical activity (Štefan et al, 2018). When the parental influence reduces, there is sudden freedom to take over the control of your own life. This may include watching a late night movie or to use social media all night until you finally fall asleep. Many studies have found that internet addiction is a major problem in the current generation. Ko*et al*. (2005) reported that approximately 20% of youth are internet addicts, parental observation on elementary and junior high students revealed that about 45% of them have some kind of sleep problems (Gau, 2006). Fineberg et al (2013), opined that "Addiction-related sleep problems and addiction are prevalent, and contribute to a notable fraction of the disease burden in mental and neurological disorders in established market economies". Hence, verifying the long term associations between sleep problems and internet addiction

may lead to form prevention and treatment strategies for improving sleep quality and reduction of internet addiction. Other than the academic stress and new lifestyle changes that can affect sleep, a research made on Japanese students also suggested that sleep and dietary behaviours affected one another (Otsuka et al, 2018).

From the results, we also find out that pre university students had better sleep quality than the undergraduate students. Students experience several important developments when starting at university. They have to cope with "leaving home, increased independence, changes in peer groups, new social situations, maintenance of academic responsibilities and increased access to alcohol or drugs" (Taylor et al, 2013). Factors like restricted use of the internet, being under parents' influence, enrolment in sports and co curricular activities might be the reason for the difference. Sleep in children and adolescents usually show changes in a predictable way, with sleep duration decrease with age (Hinds et al, 2007). In adolescence, environmental factors and experienced stress may alter the regulation and circadian rhythm sleep (Brand, Markus, Martin, beck &Trachsler, 2009). 27% of all university students are at a risk of at least one sleep disorder (Gaultney, 2010).

The results also show that students of science and commerce courses had better sleep quality than students of students of arts courses. One of the reasons can be that students of science and commerce courses have more classes and are busy with projects and assignments than students of arts courses. Though arts students also have projects and assignments, it is comparatively less and hence they have more time for distraction and use of internet for recreation which might lead to poor sleep quality. Contrary to popular belief, art students are equally and in some cases more vulnerable to depression, anxiety and stress (Baviskar, Phalke & Phalke, 2013), this might also be a major reason for poor sleep quality amongst arts students.

Sleep disorders may result in fatigue, tiredness, depression and problems in daytime functioning. Other factors such as gender, domicile and place of residence did not have a significant influence over sleep quality of the students. Definitely, the findings of the present study are quite alarming and educationists, psychologists and policy makers should look into this serious aspects and come out with concrete strategies to improve the sleep quality of the students.

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Conflict of Interest

There is no conflict of interest.

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