

Association of Sleep Quality With General Health Among Medical Students

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Abstract

Determine the association of sleep quality with general health among medical students. 200 Undergraduate medical students were included from different universities of Karachi. Study design was cross sectional. Convenient non probability technique was used. Sleep quality and general health questionnaires were distributed among the students to analyze the data. Descriptive statistical and chi square was applied. Informed consent were obtained for their permission then sleep quality questionnaire and general health questionnaire were distributed among the students to analyze their sleep quality and their effect on general health. After the results it was found that 4.5% participants sleep were in severe problem, 27.5% had some sleep problem, 40.0% had sleep in good shape and 28.0% participants sleep was in great shape. 56% participants reported good general health whereas 44% reported bad general health. Sleep plays an important role in daily life. Sleep quality significantly affects the general health among medical students. The results of this study concluded that sleep quality and general health are positively associated with each other. Participants who had experienced poor sleep quality showed bad general health, whereas participants who had good sleep quality showed good general health.

Keywords

Sleep quality, general health, medical students



1 INTRODUCTION

Sleep is physiological process important to life. It is Essential for growth, repair, learning and consolidation of memory. It also effect body composition. (1) Sleep is a "Natural periodic suspension of consciousness during which the powers of the body are restored". Normally human sleep at night around six to nine hours. (2) Sleep quality contains measurement of both quantitative and qualitative components. Quantitative components measures the time of sleep while qualitative component assesses the depth and feeling of restfulness when awakening.(3) Sleep is essential for learning and memory consolidation. Recent researches have indicated an important relationship between sleep patterns with learning abilities and academic performance. Medical students are a special group of young adults whose academic and lifestyle can affect sleep habits which causes sleep deprivation. Students do not realize that sleep habits affect their academic performance. (4)Newborns from 0 to 3 months, sleep range are 14-17 hours each day. Infants from 4 to 11 months, sleep range are 12-15 hours. Toddlers from 1 to 2 years, sleep range are 11-14 hours. Preschoolers from 3 to 5, sleep range are 10-13 hours. School age children from 6 to13, sleep range are 9-11 hours. Teenagers from 14 to 17, sleep range are 8-10 hours. Younger adults from 18 to 25, sleep range are 7-9 hours. Adults from 26 to 64, sleep range did not change and remains 7-9 hours. Older adults age greater than 65, sleep range are 7-8 hours.(5)

The brain changes periodically between two different stages that are rapid eye movement (REM) and non rapid eye movement (NREM), which are different by specific types of brain activity. (6)

It is defined as, the degree to which restful sleep is sustained throughout the night, where as healthy normal person feels refresh and energetic upon waking up and all over the day. (7)

Good quality sleep is relevant for health and wellbeing of a person. It is a key for next day freshness, energy and passion. Good sleep is continued, proper, and has no awakeningthroughout.(8)

One of the essential features of sleep health is the quality of sleep. Problem of poor sleep quality is com-

mon these days because of changes in sleep pattern. This difference is due to changing habits. Nowadays sleep problems and poor sleep quality is problem in public health. Poor sleep quality is an important causes of poor academic performance, emotional dysfunction, and problem in judgment.(9)Bad quality of sleep has a worst effect on the quality of life, as it isinvolved in increased disease rate due to psychiatric disorders, car and motorbike accidents, early aging, depression, renal failure. (10)

There are different reasons for getting adequate sleep, that is enhance learning and memory, maintenance of weight and metabolism, enhance safety and mood, cardiovascular health and improve up the immune system.(11) Many factors alter sleep habits that includes intake of coffee and tea, too much use of the internet and more social media, taking sleep medicines.(12)

Sleep problems affect 50 to 70% millions in the US. Two adults in five sleep less than 7 hours each week-night and for three adults in eight, their sleepiness during the day interferes with daily activities at least a few times a month. Sleep deficiency not only affects ability to function normally but is associated with psychiatric disorder. (13)

Health can be defined as "a state of physical, mental, and social well-being and not merely the absence of disease or infirmity" (14)

Many studies suggested that limited sleep duration can be associated with the development of obesity from childhood to adulthood. (15)

Lack of sleep can cause fatigue throughout the day and can enhance social and occupational problems, irritability, aggressive behavior and decrease social interaction between people who are suffering from sleep deprivation. (16)

Sufficient sleep is composed of many factors such as sleep quality and quantity. Sleep hygiene covers a range of behaviors that are helpful to sleep. These include, bedroom as comfortable as possible, going to bed at the same time every day and sleeping on the same bed. In a previous study sleep hygiene in univer-

sity students, three sleep hygiene behaviors found to be the most applicable are, avoid going to bed without eating or drinking, avoid anxiety and stress increasing activity before bed, and making the bedroom and sleep environment comfortable.(17)

Stress, a worldwide health problem and a common factor which affects sleep quality and its duration. Sleep problems even minor, can affect anyone's physical, emotional and mental health and wellbeing. Poor sleep level also lessens ability to deal actually with stressors experience on a daily basis, and increase unhealthy eating patterns which increase the changes of obesity.(18)

Quality of Life (QOL) disrupted due to many different factors. It causes because of working hours increasing, professionals like health care providers, security and transportation needs working at night. Such professions have effect of sleep deprivation on performance. People increase their working capacity and compromise their night sleep and become chronically sleep deprived. Thus disturbs cognitive behavior like attention and memory. (19)

It is an essential to understand that people of different ages, and ethnicities are at risk of becoming sleep deprived. People who have limited time for sleep, such as students, people working lots of hours or one or more jobs same day. Other people would be those whose life style choices do not allow them to receive enough amounts of sleep like individuals who take medicines to stay awake, those who drink alcohol, or those who don't place sleep on their priority list. (20)

Sleep and mental health are interconnected with each other. Insufficient sleep affects psychological and mental health. People with mental health problems are possible to have insomnia or other sleep problems and conditions. (21)

Many researches found that benefit's of exercise is improving sleep patterns. Exercise boost mood and decrease stress. It can strong circadian rhythms, promotes daytime alertness and helping sleep at night. Exercise has shown better sleep for people with sleep problems, such as insomnia and ob-

structive sleep apnea. Daily exercise significantly more likely to report sleeping goodmostly at nights than people who were physically inactive. Research has shown exercise can aid to change not only the quantity but also the quality of sleep. (22)

Sleep is essential to health same as eating, drinking and breathing. It enables body to repair by themselves and brain to remember memories. Improper sleep is associated with physical problems such as weaker immune system of body and mental health conditions such as depression and anxiety. There is an evidence based advice to have proper quality of sleep. (23)

A study was done on impact of sleep quality and general health on academic performance. Result concluded that it has not been proven that sleep quality and general health effects academic performance.(7) The study was conducted on exploring gender difference in sleep quality of young adults result concluded that poor sleep quality is more common in young adult, but it is mostly found in females. (24)

2 METHODOLOGY

This was a cross-sectional study design. Setting was different institute of Karachi Duration of study was 6 months. Non-probability Convenient sampling was used. Undergraduate medical student's .Both gender was included. Data was collected by validated and adopted questionnaire from the study "Sleep quality questionnaire" and "General health questionnaire. Informed consent were disturbed for their permission then sleep quality questionnaire and general health questionnaire were distributed among the students to analyze their sleep quality and their effect on general health.

2.1 Figures

Table 1: Gender of the participant

	Frequency	Percent
Male	47	23.5
Valid Female	153	76.5
Total	200	100.0

	Frequency	Percent
0-9. Severe sleep problem.	9	4.5
10-18. Some sleep problems	55	27.5
19-27. Sleep is in good shape	80	40.0
28-36. Sleep is in great shape	56	28.0
Total	200	100.0

Table 2: Sleep hours of the participants

	Frequency	Percent
<6 hours	171	85.5
6-9 hours	22	11.0
Valid >9 hours	7	3.5
Total	200	100.0

Table 5: Sleep quality score * General health score Cross Tabulation

	General health score		Total
	<15 Good general health	>15 Bad general health	
0-9. Severe sleep problem.	2	7	9
10-18. Some sleep problems	20	35	55
19-27. Sleep is in good shape	48	32	80
28-36. Sleep is in great shape	42	14	56
Total	112	88	200

Table 3: Rate sleep quality

	Frequency	Percent
Very poor	10	5.0
Poor	48	24.0
Average	57	28.5
Good	53	26.5
Very good	32	16.0
Total	200	100.0

Table 4: Sleep quality score

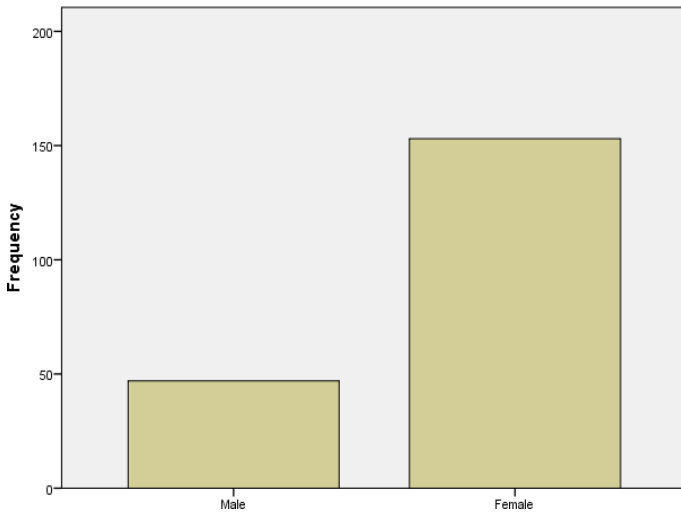


Figure 1: Gender of the participants

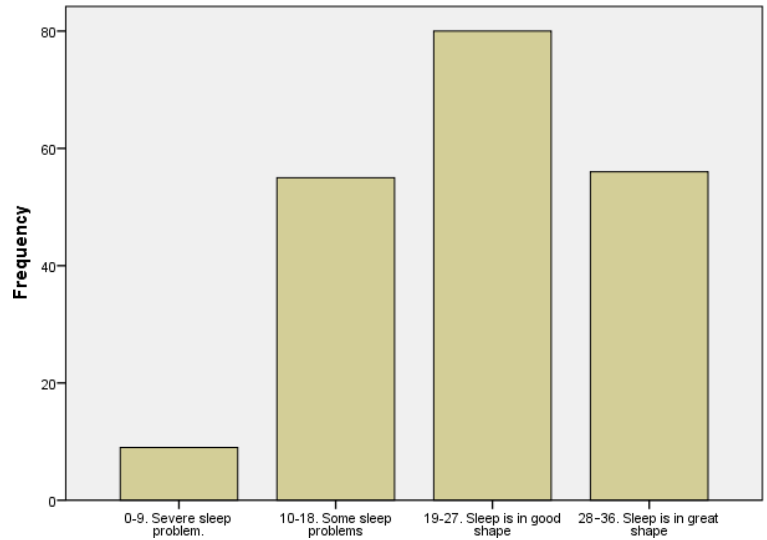


Figure 4: Sleep quality score

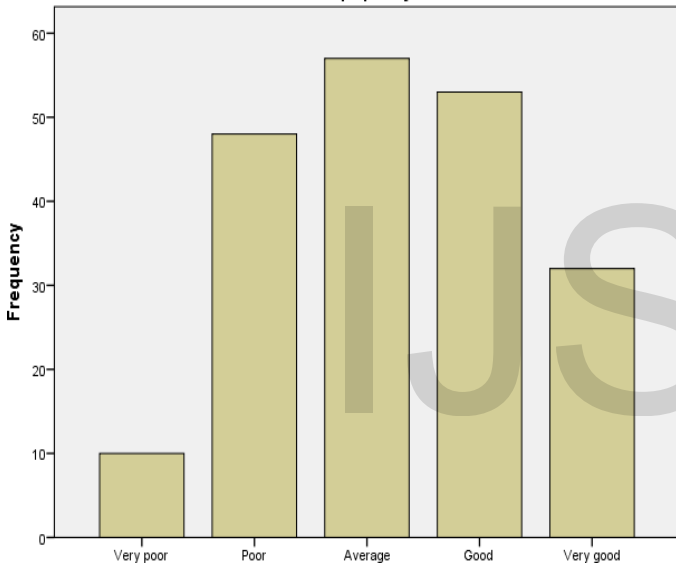


Figure IV-2: Sleep hours of the participants

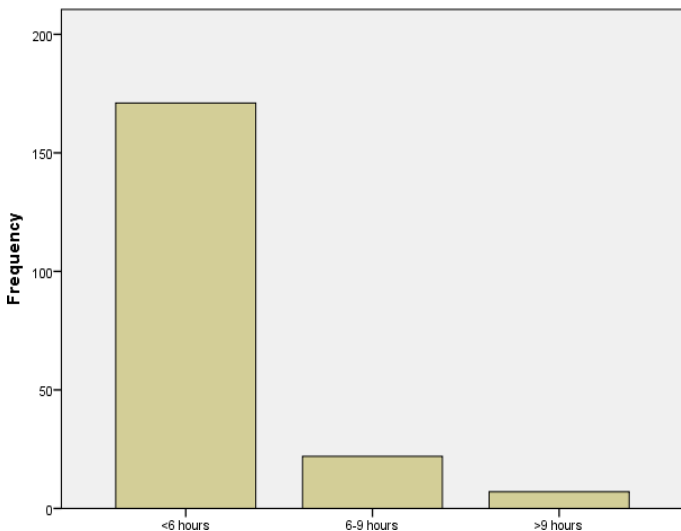


Figure 3: Rate sleep quality

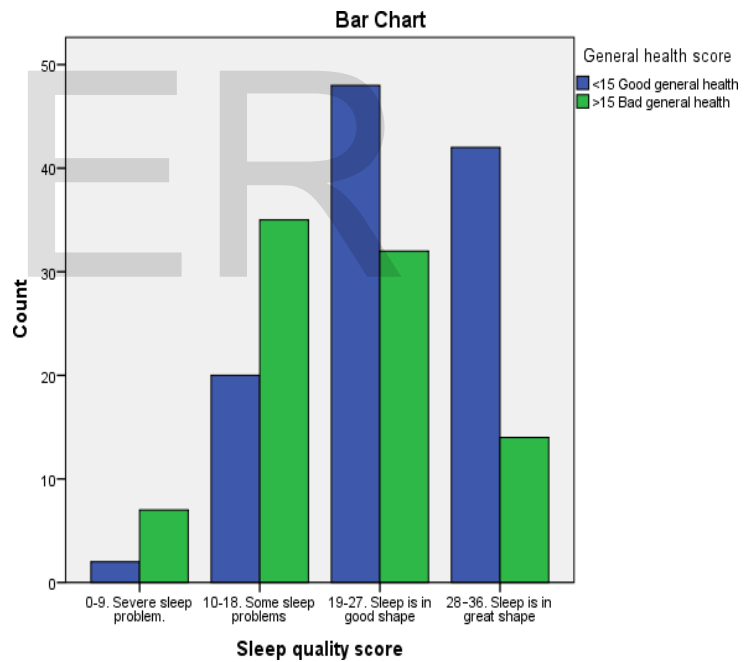


Figure 5: Cross tabulation of sleep quality and general health score

3 RESULT

Table1. Out of 200 participants the mean age was 22.12, \pm 1.897, minimum age was 17 and maximum age was 33.

Table 2. The participants were asked about sleep duration, 171(85.5%) had sleep less than 6 hours, 22(11.0%) had sleep for 6-9 hours and 7(3.5%) had

sleep more than 9 hours.

Table3. Out of 200 participants they were asked to rate their sleep quality, 10(5.0%) rated very poor sleep quality, 48(24.0%) rated sleep quality poor, majority of participants 57(28.5%) rated sleep quality as average, 53(26.5%) rated good quality of sleep and 32(16.0%) rated very good quality of sleep.

Table4. In the score of sleep quality, 9(4.5%) had severe sleep problem, 55(40.0%) had some sleep problem, 80(40.0%) had sleep in good shape and 56(28.0%) had sleep in great shape.

Table5. In the cross tabulation of sleep quality score and general health score, 9 people had severe sleep problem in which 2 had good general health while 7 had bad general health. 55 people had some sleep problem in which 20 had good general health while 35 had from bad health. 80 people sleep is in good shape, 48 had good health while 32 had bad health. 56 people sleep were in great shape, 42 had good health while 14 had bad health. Out of 200 participants 112 had good general health and 88 had bad general health. It is noticed that people with sleep problem had bad impact on health.

5 DISCUSSION

In the year 2011, a study was carried out by Xueming et al. The study was conducted on sleep insufficiency, sleep health problems and performance in high school students. This study concluded that inadequate sleep in population who go to school early in the morning had poor school performance.(25) According to current study it also showed close relationship between quality of sleep and general health. Gender differences were not significant. Most of the students had bad general health as their quality of sleep was also poor.

4 CONCLUSION

Sleep plays an important role in daily life. Sleep quality significantly affects the general health among medical students. The results of this study concluded that sleep quality and general health are positively associated with each other. Participants who had experienced

poor sleep quality showed bad general health, whereas participants who had good sleep quality showed good general health.

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