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EFFECT OF EXCESSIVE MOBILE PHONE USAGE (HOURS) ON SLEEP PATTERNS AMONG THE MEDICAL STUDENTS OF KING EDWARD MEDICAL UNIVERSITY LAHORE

Dr. Azka Naeem, Dr. Urva Khan, Dr. Asad Ali
Mayo Hospital Lahore, Pakistan

Abstract:
People using excessive mobile phone usage have altered sleep patterns. Mobile phone usage alters daily work due to attention deficits which occurs because of waking up too many times by mobile phone vibration or psychological intent to check messages /calls during sleep or due to alarms set on mobile phone.
***Methods**: Patients aging between 18 to 23 were taken. They were administered questionnaires regarding the mobile phone usage at night and sleep patterns were analyzed.*
***Results**: We conducted the study on 100 medical students in KEMU. 50 of them were males and 50 were females. 98 among them were above 20 years' n 97 among them were unmarried. They used their mobile phones throughout the day even at wedding parties, dining tables, while talking to others and some of them even took it to washrooms with them. Most of them (77%) used mobile phone at night as well and they couldn't sleep for more than 10 hours at night. They do not feel fresh when they get up in the morning. This in turn influences their academic performance.*
***Conclusion**: It appears that the use of mobile phone by medical students at KEMU does have a negative impact on their sleep, this has adversely affected their day time activities and academic performances.*
Key Words: *Mobile phone, excessive usage, sleep patterns*

Corresponding Author*:
Dr. Azka Naeem,
Mayo Hospital Lahore,
Pakistan

QR code

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INTRODUCTION:

Cellular telephone is a type of short wave analog or digital telecommunication in which a subscriber as a wireless connection from a mobile phone to relatively nearby transmitter. According to study sleep disturbance, students using mobile phone for > 2 hour /day may cause sleep deprivation and day time sleepiness affecting cognitive and learning abilities of medical students.[1] In prospective analysis, overuse was associated with stress and sleep disturbances for women and high accessibility was associated with stress sleep disturbance and symptoms of depression for both men and women.[2] Another study said use of computer ,cellphones and television at high dose was associated with delayed sleep/wake schedules wake lag, potentially impairing health and educational outcomes.[3] According to a study done in psychiatric ward adolescents completed paper and pencil surveys in waiting room. More than half took their phone to bed (62.9%) and kept it turned on while sleeping (56.8%). Almost half used their phones as alarm (45.7%). More than one third texted after going to bed (36.7%). Two or more time 7.9 were awakened by a text after going to sleep. [4] Frequent week day technology use at bedtime was associated with significant adverse effects on multiple sleep patterns. [5] Mobile phone usage for playing/surfing/texting was positively associated with insomnia and chronotype and negatively associated with morningness.[6] This study examines that 47% students reported night time waking to answer text messages and 40% to answer phone calls. Regression analysis indicated that higher levels of technology use after the onset of predicted poorer quality sleep and poorer quality sleep predicted symptoms of depression/anxiety. [7] The results of another study revealed 65% prevalence of mobile phone usage nearly three quarters of them (72.5) were complainer of health manifestation. They suffered from headache (43%) earache (38.3) sense of fatigue (31.6) sleep disturbance (29.5) concentration difficulty (28.5) and burning face sensations (19.2) [8]

While potential benefits of this technology continue to emerge so do potential psychological risks. The purpose of this study is to determine if mobile phone interfere with adolescent sleep. This will help understand that excessive mobile phone usage alters daily work due to attention deficits which occurs because of waking up too many times by mobile phone vibration or psychological intent to check messages /calls during sleep or due to alarms set on mobile phone. Better management of technology can enhance health and well-being of adults. The previous studies were one on all age groups. We will be doing our study specifically on medical students to know how the excessive use of mobile phone affects their studies and their attention in classes and wards.

METHODOLOGY:

After the approval of synopsis from board of studies and IRB of King Edward Medical University all 100 students studying at KEMU Pakistan and fulfilling inclusion exclusion criterion between ages of 18 to 23 were taken. Demographic information such as name age sex height and weight was also obtained. The survey procedure was distributed by hand and full secrecy was kept. The major areas included in questionnaire were 1. Sleep duration 2. Sleep pattern 3. Day-time attention. Study design**:** Cross sectional study. Setting: MBBS students of KEMU.Duration**:**2 months. Sample size**:**100 students out which 50 females and 50 males. Sampling technique**:** Questionnaire study, Data collection tool: Pre tested questionnaire. Data analysis: All collected data was entered and analyzed in computer SPSS version 16.

RESULTS:

The objective of this study was to know the association of excessive mobile phone usage with the sleep patterns among the medical students; Different variables were considered and are shown in table 1.

We conducted the study on 100 medical students in KEMU. 50 of them were males and 50 were females. 98 among them were above 20 years' n 97 among them were unmarried. They used their mobile phones throughout the day even at wedding parties, dining tables, while talking to others and some of them even took it to washrooms with them. Most of them (77%) used mobile phone at night as well and they couldn't sleep for more than 10 hours at night. Moreover, the results pointed to the fact that using mobile phone at night to check calls or messages or alarm does have an effect on sleep which in turn affects the daily chores.

Frequency table:

Variable	Frequency	Percentage
Age of student		
Below 20	2	2
Above 20	98	98
Marital status		
Unmarried	97	97
Married	3	3
Sleep for more than 10 hours		
Yes	21	21
No	79	79
Use of mobile phone at night		
Yes	77	77
No	23	23
Do you use mobile phone constantly?		
Yes	38	38
No	62	62
Do you take lapses in mobile phone usage?		
Yes	91	91
No	9	9
Are your dreams related to recent activity on mobile phone?		
Yes	11	11
No	89	89
Do you take mobile phone with you in washroom?		
Yes	24	24
No	76	76
Do you take mobile phone anywhere you go? E.g. wedding etc.		
Yes	89	89
No	11	11
Do you take mobile phone to dining table and check it while eating?		
Yes	41	41
No	59	59
Do you find difficulty in sleeping?		
Yes	26	26
No	74	74
Do you use mobile phone while talking to somebody?		
Yes	55	55
No	45	45
Is your mobile ring tone loud enough to wake you up at night?		
Yes	34	34
No	66	66
Are you an early riser?		
Yes	38	38
No	62	62
Do you sleep constantly whole night?	79	79
Yes	21	21
No		
Do you dream while sleeping?		
Yes	81	81
No	19	19

Do you check your mobile phone before going to bed?		
Yes	91	91
No	9	9
Do you check your mobile phone after waking at intervals during sleep?		
Yes	44	44
No	56	56
Does your mobile phone ringtone/vibration make you alert in sleep?		
Yes	37	37
No	63	63
Do you think you can sleep better without mobile phone?		
Yes	47	47
No	53	53
Do you reply to your messages after hearing vibration while sleeping?		
Yes	24	24
No	76	76
Do you feel fresh when you wake up?		
Yes	61	61
No	39	39
Do you check your mobile phone in bed immediately after waking up?		
Yes	80	80
No	20	20
Do you feel sleepy in class?		
Yes		
No	70	70
	30	30
Do you use mobile phone in class?		
Yes	76	76
No	24	24
Do you feel active in class?		
Yes		
No	38	38
	62	62
Do you feel irritable when your phone is displaced?		
Yes	84	84
No	16	16
Do you feel lazy and exhausted during working hours?		
Yes	53	53
No	47	47
Do you find unable to concentrate on day's tasks?		
Yes	39	39
No	61	61
Do you feel attention deficit due to inadequate sleep?		
Yes	37	37
No	63	63
Does decreasing mobile phone usage at night improve this situation?		
Yes	45	45
No	55	55

DISCUSSION:

Use of mobile phone is the basic requirement of modern generation. Many of their daily tasks depend on it. In addition, it plays an important role in linking people with one another, helps in passing time and is a source of entertainment. We conducted this study to show the effects of mobile phone usage on the sleep pattern of medical students. Adequate sleep at night is very important for the efficient day time working of a student. Our study reviled how excessive mobile phone usage is adversely affecting the sleep pattern among students and is in turn decreasing their efficiency at work.

We conducted the study on 100 medical students in KEMU. 50 of them were males and 50 were females. 98 among them were above 20 years' n 97 among them were unmarried. They used their mobile phones throughout the day even at wedding parties, dining tables, while talking to others and some of them even took it to washrooms with them. Most of them (77%) used mobile phone at night as well and they couldn't sleep for more than 10 hours at night. 91 students used their mobile phones in lapses. They checked their mobile phones before going to bed. 80 students checked their mobile phones at waking up. 37% students got up at night in intervals to check the phone and reply to messages.

76 out of 100 students used mobile phone in class room. They replied to text messages and played games. Some of them also used internet in the classroom. They did not listen to the lectures. This in turn influences their academic performance. 84%students feel irritable and depressed when they lose their mobile phones. This shows their addiction with the cellular phones and how much this device has merged into every field of their life. This behavior has also been proved by Sara Thomee, Anika Harenstam, and Mats Hagberg. In prospective analysis, *overuse* was associated with stress and sleep disturbances for women, and *high accessibility stress* was associated with stress, sleep disturbances, and symptoms of depression for both men and women. [9]

The main effect of this nocturnal usage of mobile phone is late rising among students. Only 38 students were early risers. Remaining 62 students found difficulty in rising up early in the morning. These results have been supported by the study of Dr Mari Hysing according to which Adolescents spent a large amount of time during the day and at bedtime using electronic devices. Daytime and bedtime use of electronic devices were both related to sleep measures, with an increased risk of short sleep duration, long sleep onset latency and increased sleep deficiency. [10]

This late rising couldn't help them find time for a healthy breakfast which is in turn necessary for the better functioning of a brain. Moreover, late rising made them late comers in the classroom. Students at KEMU couldn't find proper place to sit in the class room when they get late. The student reaching earlier gets best place in the classroom where he can listen to the lecture.

61%students claimed that they do not feel fresh when they get up in the morning. They feel unmotivated and irritable. This mostly happens due to inadequate sleep or sleeping late at night mostly as a result of unnecessary usage of mobile phone at night.

70 out of 100 students felt sleepy in the classroom. They were unable to concentrate on the lectures and ward work. Some of them even took naps in the classroom. 53 out of 100 felt lazy during working hours.

62 out of 100 students said that they did not feel active in the class. They did not actively participate in the academic activities. This has been supported by studies of Jan Van del Bulk. According to his results Mobile phone use after lights out is very prevalent among adolescents. Its use is related to increased levels of tiredness. There is no safe dose and no safe time for using the mobile phone for text messaging or for calling after lights out. [11]

But the present study does not show any effect on the dreams of students. Nearly all students dreamt at night and 89% said that their dreams were not related to the last night's activity on mobile phone. Moreover, they could sleep anytime they wanted if their mobile phones do not disturb them. 47% students say that they can sleep better without mobile phone. This shows that the excessive mobile phone usage or radio frequency radiations do not have any effect on human sleep patterns. This has been supported by studies of Nakatani Enomoto S that continuous wave EMF exposure for 3 h from a W-CDMA-like system has no detectable effects on human sleep. [12] Mohler E also showed in his studies that there is no evidence for adverse effects on sleep quality from RF-EMF exposure in our everyday environment. [13]

55% students agreed in the end that decreasing the mobile phone usage can improve the situation. It can help them get better sleep and in turn perform in a better way during the working hours.

CONCLUSION:

It appears that the use of mobile phone by medical students at KEMU does have a negative impact on their sleep, although the precise effects and mechanisms remain unclear. Across different media types, the most consistent results have been obtained regarding delayed bedtime and shorter total sleep time associated with excessive media use. This has adversely affected their day time activities and academic performances. In future research, it would be good to develop and test a model of the mechanisms by which media use affects sleep

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