



Research Article

The Impact of using the Internet and Social Media on Sleep in a group of Secondary School Students from Baghdad

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ABSTRACT

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Background: Insufficient sleep due to excessive media use is linked to decrease physical activity, poor nutrition, obesity, and decreased overall health-related quality of life.

Objectives: To assess the effect of using the internet and social media on the sleep of 4th-stage secondary school students.

Subjects and Methods: Cross-sectional study with the analytic element; for 500 secondary school students, obtained by choosing two schools randomly from each of the six educational directorates, by using a structured questionnaire.

Result: Secondary school students are involved in this study (n = 500). The study reveals that the majority of students 350 (69.7 %) were aged group (16) years old, Regarding the internet, used by the majority of the 454(90.4%), and 419 (83.5%) students had a mobile phone, 206(41.1%) of them using the internet more than 150 hours per month and concerning the students sleep; Unexplained tiredness in the morning 182(36.3%) was sometimes complained from it, about Nightmares, 187(37.3%) of students sometimes having it, 276(55%) of them wake up during sleep.

Conclusion: students are using the internet more than one-fifth of their time per month, there is an association between the use of social media and short sleep duration among secondary school students that increases daytime sleepiness, unexplained tiredness in the morning, and nightmares.

Introduction

The Internet is a global linking of computers that allows information transfer. It was established in the early 1960s by the U.S. Department of Defense, primarily for military purposes. Since then, the continual improvement of technology has provided an extraordinary level of public accessibility to a wide range of forms of communication (1). Media is a kind of technology and web site that provides a platform for accessing information, sharing ideas and promoting communication (2). Generation of adolescents growing

up immersed in media, including broadcast and social media (3). The most popular social media include Facebook, Facebook Messenger, Twitter, Whatsapp, Instagram, Skype and Viber (4). Like elsewhere in the Middle East, in Iraq social media is a way of communication. The amount of Iraqi users on Facebook exceeds two million users (5). During the last 5 years, the number of pre adolescents and adolescents using such sites has increased dramatically. According to a recent poll, 22% of teenagers log on to

their favorite internet media sites more than (10) times a day, and more than half of adolescents log on to a social media sites more than once a day (6).

The importance of sleep is even much greater for children and adolescents. Sleep problems are commonly reported in adolescents with an estimated prevalence between 27% and 40% (7). The National Sleep Foundation in the United States and the Canadian movement guidelines recommend that adolescent sleep between 14–17 years eight and 10 hours per night to maximize overall health and well-being (8). Internet addiction among adolescents widely varies through international estimates, The prevalence of adolescent’s internet addiction was reported between 7.9 % and 22.8 % spent long time on the internet and this can cause sleep deprivation, irregular bedtime hours, inactivity, irregular eating habits, skipping meals, eating an unbalanced diet and affect other similar activities of daily life (9). Numerous cross-sectional studies have shown that Internet addiction can result in a short duration of sleep (10).

This study aims to assess the effect of using the internet and social media on the sleep of 4th stage secondary school students.

Subjects and Methods

Study design: Cross-sectional study with an analytic setting, conducted in Baghdad during the period from 1 Feb- 1st April 2018.

Sampling technique: Five hundred student are involved in this study (N = 500) from secondary school students in Baghdad, were obtained by randomly choosing two schools from each of the six educational directorates in Baghdad, one boys school other for girls, and involving all the 4th stage students from each selected school.

All students of the 4th stage from the selected secondary schools were chosen and present on the day of the researcher's visit to the school were included.

Students of the other classes and students of the 4th stage who were absent on the day of collecting data from secondary schools were excluded.

The questionnaire used is divided into the demographic section, time spent with media tools, sleep condition.

Verbal consent was obtained before introducing the questionnaire to each student who answered on separate paper, resource privacy, and security of answer, safety and right to involve time needed to do this research

Statistical analysis and coding technique: The statistical package for social science (SPSS) version 23 was used for data entry and analysis. Data were presented in simple measures of frequencies and percentages; The chi-square test for independence was used to test the significance of associations between discrete variables. Findings with P value less than 0.05 were considered significant.

Results

Five hundred students were involved in this study (N= 500) from secondary school students in Baghdad, the study revealed that the majority of students 349 (69.8 %) were within second age group

(16) years old, 69(13.8%), regarding gender, 252 (50.4%) of the study sample were boys and 248(49.6%) were girls, which is shown in table 1.

Table 1: Distribution of students accords to their demographic features

		Frequency N=500	%
Age (year)	15	66	13.2
	16	349	69.8
	17	69	13.8
	18	12	2.4
	19	4	0.8
Gender	Boy	252	50.4
	Girl	248	49.6
Total		500	100.0

Therefore, the researcher found that the total time spent with all media types (TV, internet, and Text message) monthly 198 (39.6%) of students spent from 201-300 hours per month on it, 166(33.2%) of them spent from 301-400 hours monthly while 88 (17.6%) of students spent from 100-200 hours per month and only 48(9.6%) of them spent more than 400 hours monthly. as shown in figure 1.

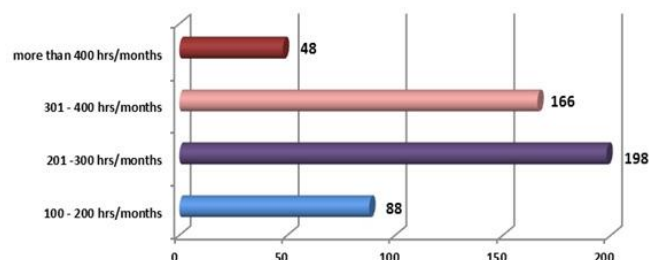


Figure 1: Distribution of students according to time spending with all (TV, Internet, Text Message) monthly

Also, the study revealed that the majority 267 (53.4%) of students had an average sleep hour from 12 A.M. to 2 A.M., Regarding the time spent to sleep, 189 (37.8%) of them need 10-20 minutes to sleep, as shown in table 2.

Table (3) shows that the majority 306 (61.2%) of students didn't have interrupted sleep, while only 194(38.8%) of them were complaining from interrupted sleep, so 182 (36.4%) of them always had insufficient sleep, concerning Unexplained tiredness in the morning 182 (36.4%) sometimes complained from it. About Nightmares, 187 (37.4%) of students sometimes had nightmares, most of the students 275 (55%) woke up during sleep and 225(45%) of them were not. Of those who woke up during sleep, 131 (26.2%) of them woke up once during sleep, and 100(20%) of them woke up twice.

Finally, 137 (27.4%) of students needed less than 10 minutes to return back to sleep, and 90(18%) of students needed 10-20 minutes to sleep again.

Table 2: Distribution of 4th stage students according to the time needed for sleep

		F	%
Average sleep (Hrs.)	before 8 o'clock night	5	1
	8- 10 o'clock night	7	1.4
	10-12 o'clock night	123	24.6
	12 - 2 o'clock morning	267	53.4
	after 2 o'clock morning	98	19.6
Time till sleep	no time needed	2	0.4
	less than 10 minutes	68	13.6
	10-20 minutes	189	37.8
	21 -30 minutes	117	23.4
	31 -40 minutes	23	4.6
	41 and more minutes	101	20.2
Total		500	100.0

Table 3: Distribution of 4th stage students according to the Sleep condition

		F (N=500)	%
Interrupted sleep	Yes	194	38.8
	No	306	61.2
Not sufficient sleep	Always	182	36.4
	most times	173	34.6
	sometimes	119	23.8
	Never	26	5.2
Unexplained tiredness in the morning	Always	88	17.6
	most times	137	27.4
	sometimes	182	36.4
	Never	93	18.6
Nightmares	Always	51	10.2
	most times	90	18
	sometimes	187	37.4
Wakeup during sleep	Never	172	34.4
	Yes	275	55
Number of wakeup during sleep	No	225	45
	Total	500	100.0
	Once	131	26.2
	Twice	100	20
	three times	42	8.4
	fourth times and more	2	0.4
Time to return to sleep	less than 10 minutes	137	27.4
	10-20 minutes	90	18
	21 -30 minutes	31	6.2
	41 and more minutes	17	3.4
Total		275	55.0

The result revealed no significant association between the number of hours per month spent on watching TV with the students age, while the result as shown in this table revealed that the association between the number of hours per month spent on watching TV with students gender (p= 0.033) was statistically significant as appeared in table (4).

Table 4: The relationship between the students' demographic feature and hours spent on watching TV/ month

		TV hours per month				Total	P value
		≤ 5	5-10	10-15	≥15		
		hr/month	hr/month	hr/month	hr/month		
age	15 y	6	49	7	4	66	0.318
	16 y	43	217	56	33	349	
	17 y	7	37	14	11	69	
	18 y	3	6	3	0	12	
	19 y	1	2	1	0	4	
gender	boy	37	141	46	28	252	0.033
	girl	23	170	35	20	248	
Total		60	311	81	48	500	

Table 5: The relationship between the students' demographic feature and no. of hours spent on used internet monthly

		Internet hours per month				Total	P value
		≤50	50-100	101-150	≥150		
		hr/month	hr/month	hr/month	hr/month		
Age	15 yrs	2	16	18	30	66	0.014
	16 yrs	13	102	108	126	349	
	17 yrs	1	10	16	42	69	
	18 yrs	0	2	3	7	12	
	19 yrs	1	0	2	1	4	
Gender	Boy	6	55	75	116	252	0.049
	Girl	11	75	72	90	248	
Total		17	130	147	206	500	

The result revealed that association between the number of hours used for internet per month with students age (p=0.014) and gender (p=0.049) was statistically significant.

Table 6: The relationship between the students' demographic feature and no. of hours spent on text message monthly

		Hours text per month				Total	P value
		<50	50-100	101-150	>150		
		hr/month	hr/month	hr/month	hr/month		
Age	15 y	9	39	13	5	66	0.017
	16 y	40	189	71	49	349	
	17 y	7	26	15	21	69	
	18 y	0	10	0	2	12	
	19 y	1	2	0	1	4	
Gender	boy	24	135	50	43	252	0.516
	girl	33	131	49	35	248	
Total		57	266	99	78	500	

The result revealed no significant association between the number of hours used for text message per month with the students gender, while the result as shown in this table revealed that the association between the number of hours used for text message per month with students age (p=0.017) was statistically significant.

Table 7: The relationship between number of hours used for internet per month with sleep condition

		Hrs internet per month				total	P value
		<50 hr/month	50-100 hr/month	101-150 hr/month	>150 hr/month		
Average sleep hrs	Before 8 o'clock night	0	0	3	2	5	0.000
	8 -10 o'clock night	1	2	2	2	7	
	10-12 o'clock night	7	51	29	36	123	
	12-2 o'clock morning	7	63	89	108	267	
	after 2 o'clock morning	2	14	24	58	98	
Time till sleep	no time needed	0	1	0	1	2	0.952
	less than 10 mints	1	22	18	27	68	
	10-20 mints	6	46	59	78	189	
	21 -30 mints	5	27	39	46	117	
	31 -40 mints	2	6	4	11	23	
wakeup morning in school day	41 and more mints	3	28	27	43	101	0.149
	Before 6 o'clock morning	3	16	10	20	49	
	6 -7 o'clock morning	8	85	91	113	297	
	7-8 o'clock morning	6	28	45	65	144	
	8 -9 o'clock morning	0	0	0	6	6	
wakeup morning in the holiday	after 9 morning	0	1	1	2	4	0.274
	before 6:00 o'clock morning	1	2	2	1	6	
	6 -7 o'clock morning	0	3	0	4	7	
	7-8 o'clock morning	1	2	6	5	14	
	8 -9 o'clock morning	3	18	17	16	54	
Interrupted sleep	after 9:00 morning	12	105	122	180	419	0.577
	Yes	9	52	53	80	194	
Not sufficient sleep morning	No	8	78	94	126	306	0.013
	Always	6	37	56	83	182	
	most times	4	38	56	75	173	
	sometimes	5	47	26	41	119	
Unexplained tiredness morning	Never	2	8	9	7	26	0.022
	Always	3	14	24	47	88	
	most times	4	30	45	58	137	
	sometimes	3	57	54	68	182	
Nightmare	Never	7	29	24	33	93	0.248
	Always	5	10	18	18	51	
	most times	1	27	24	38	90	
Wakeup during sleep	sometimes	6	47	59	75	187	0.414
	Never	5	46	46	75	172	
Total	Yes	10	67	76	122	275	0.414
	No	7	63	71	84	225	
Number of wakeup during sleep	Total	17	130	147	206	500	0.796
	Once	5	31	32	63	131	
	Twice	3	26	28	43	100	
	three times	2	10	16	14	42	
	fourth times and more	0	0	0	1	1	
Time to return to sleep	less than 10 minutes	3	28	39	67	137	0.106
	10-20 minutes	3	27	25	35	90	
	21 -30 minutes	1	7	9	14	31	
	41 and more mints	3	5	3	6	17	
Total		10	67	76	122	275	

The result of the current study revealed that the association between the number of hours used for the internet per month with the average hours of sleep ($p=0.000$), insufficient sleep in the morning ($p=0.013$), and unexplained tiredness in the morning ($p=0.022$) was statistically significant

Discussion

The sample included in this study showed that the majority of students aged (16) years old, this was because it's the normal age for this stage in Iraq, and many other countries for example Singapore study in 2017 of tertiary students (11), there was a statistically significant association between the students age with the number of hours used for the internet monthly($p=0.014$), and the hours used for text message per month ($p=0.017$) this was agreed with a case study in Kintampo-Ghana 2019(12) and a study in USA 2022(13), on the other hand this has disagreed with Hilla/Iraq study 2017(6) , who had studied the impact of social network sites upon adolescent's health behaviors for preparatory schools, Their findings indicated that most demographic data were insignificant with internet used p -value more than 0.05. Regarding gender, the ratio was almost half for both boys and girls, the study revealed that there was a significant association of gender with the duration of electronic device used as the number of hours spent on watching TV per month ($p= 0.033$), and the number of hours used for internet per month ($p=0.049$), this agreed with a case study in Kintampo-Ghana 2019(12), study in USA 2022(13) and agreed with study in the Jeddah/Saudi 2021(14) , while disagreed with Hilla/Iraq study 2017(6).

The study revealed that about more than half of students had the average sleep hours from 12 a.m. to 2 a.m. so that indicated they begin with later school night bedtimes and less sleep, this agreed with USA study 2018(15), therefore the association between the average hours of sleep with the number of hours used for internet per month with the average hours of sleep ($p=0.000$), was statistically significant and this agreed with study of a number of original research articles from US & other countries study , 2023, (16), that media watching was associated with significantly delayed bedtime.

Regarding the time spent to sleep, about thirty-seven percent of students needed 10-20 minutes to sleep, to other twenty three and a half percent of them needed 21-30 minutes to sleep, so this agreed with study of the number of original research articles from US & other countries study , 2023 (16). Consequently, the majority of students woke up in the morning between 6 a.m. and 7a.m, and regarding their waking up in holidays, most students woke up after 9a.m, so this study found that there was more attention directed toward school starting times and this agreed with USA 2018(15), in which the tendency for many school systems in the United States to start the school day earlier as children get older. Thus requiring teens to arise at an early hour relative to their typical bedtimes, circadian phases, & need for sleep .Concerning unexplained tiredness in the morning nearly half of them always had it, so there was a significant association between unexplained tiredness of students in the morning with the number of hours used for text messages per month ($p=0.002$) and the number of hours used for the internet per month ($p=0.022$), this agreed with study in Assiut, 2017 (8), study in Seongnam, Korea (17), And Jeddah/Saudi 2021 (14).

Conclusion

Most of the secondary school students (4th stage) are using the internet more than one-fifth of the time per month. One-seventh of their time is spent monthly by watching TV and text-message. End with nearly half of the day spent on them; there was an association between the use of social media and short sleep duration among secondary school students, increased daytime sleepiness, unexplained tiredness in the morning, and nightmares among students.

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Conflict of Interest

Authors declare no conflict of interest.

Data availability

Data are available upon reasonable request.

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