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The influence of social networks on the grades of medical students at University of Babylon, Iraq

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Abstract

Social networks are becoming increasingly popular among university students. The aim of this study was to explore the influence of social networks on the grades of second stage medical students at the College of Medicine, University of Babylon, Iraq. Fifty medical students completed web-hosted questionnaire about type of social networks they used frequently, time spent on these media in hours per day, main reason for use of these networks and the impact on their social interaction, study time and grades. Students were also asked to provide the cumulative grades of physiology, anatomy and biochemistry courses. Time spent by students on social networks was correlated with study time and combined grades of the three courses. All students have been using facebook and 96% have been using facebook messenger or other social networks. Eighty-four percent of students reported that social networks reduce social interaction. Average time spent on social networks and study times were 5.22±2.96, 5.51±4.57 hours per day respectively whereas students average combined grades (out of 40) was 29.85±10.63. No correlation has been found between time spent on social networks and students combined grades of the three courses or study time. Despite that social networks are very popular among medical student at University of Babylon, the use of these networks seems to have no significant effect on their grades which could be attributed to a controlled use of these networks.

Key words: Facebook, Grades, Medical students, Social networks

Social networks refer to web-based and mobile applications available on various platforms that allow users to exchange information, ideas, feelings, files, update their status and interact with other user-generated contents over internet[1]. Social networking became popular between 2004 and 2006 after Facebook and MySpace were created. Other popular social media include Twitter, Youtube, Skype, Whatsapp and Viber. What started out as a hobby for some computer literate people has become a social norm and a way of life for people from all over the world[2]. Facebook is the most popular social network around the world and was founded in 2004 by Mark Zuckerberg, Eduardo Saverin, Dustin Moskovitz and Chris Hughes at Harvard University. The number of users around the world in 2016 has exceeded 1.7 billion[3] and the age group 20-29 years constitutes the largest proportion of users in US[4]. The site allows users to write posts on walls,

share photos and videos, chat over messenger and create personalized groups and pages. In Iraq, a survey conducted by Arab Advisors Group of Iraqis above 18 years old reported that 77.9% of the respondents have one or more of social networks accounts including facebook[5].

Several factors account for the rapid expansion of social networks and numbers of their users. These factors encompass the availability of social networks on PCs, tablets and mobile phones, functionality, inexpensive and fast sharing of contents as well as using internet to connect with friends around the globe regardless of distance[6,7]. Moreover, social networks have influenced the dynamics of social interaction among people including face-face interaction and the way they generate or join social groups[8].

Social networks use are also common among young adults in colleges and universities and in the US, 71% of facebook users are college students[9] and around 58% use the site several time a day[10]. Advantages of social networks use for students include enhancing learning motivation, improving collaboration among students, and provision of personalized courses[7,11]. Further, facebook have substituted learning and course management systems (LCMS) discussion boards[12]. Drawbacks of social networks comprise gastric pain, sleeping disorders, anxiety, depression and most importantly addiction to these networks which can affect daily activities[6].

The increasing popularity of social networks among students raises questions about the impact of these networks on students academic performance and whether they have positive or negative influence on students grades. A major concern is the amount of time spent by students on these social networks and engagement with non-academic activities like chatting, watching movies or posting and commenting on photos. Results of previous work on the impact of social networks on students academic performance and grades have been inconsistent. Many studies have reported lower GPA and academic performance in students who use social networks for longer time[10,13,14]. Other studies; however, reported positive effect[10,15] or no relationship[13,16–19] between social networks use and students grades. The variability of findings of these studies could be attributed to the different measures applied to assess social networks use or students grades.

Studies regarding the impact of social networks on Iraqi students grades are limited. A recent study conducted by Abbas et al explored social networks use by medical students at our medical school demonstrated that facebook and Youtube are very popular and a positive effect for the use of social media on students grades based on students opinions[20]. The aim of this study was to explore the impact of social networks on grades and academic performance of medical students at University of Babylon, Iraq.

Materials and methods

A web-hosted questionnaire was designed and distributed among second year medical students at the College of Medicine, University of Babylon in July 2016 to collect data. The questionnaire was hosted at (www.surveygizmo.com) to allow online access by students to using various electronic devices. The questionnaire was pre-tested on a selected group of students to ensure reliability and validity and to exclude all misunderstanding. A link for the online questionnaire was posted in second year students group on facebook to ensure that students can access the survey form. The questionnaire comprised 20 questions to collect information on demographics, type of social media used frequently by students and average time spent on them (in hours), main reasons for using these media, the influence of these media on social interaction of students and students opinions regarding the effect of social media on their grades and academic performance. The students were also asked to provide the cumulative grade out of 40 for three major subjects (physiology, anatomy and biochemistry) to correlate time spent on social media with students' grades and study time. The average of the grades of the three subjects for each student was calculated to provide representative grade of academic performance. The questionnaire did not require student's name to be provided but as incentive, students were asked to provide identifier to enter an electronic drawing for three prizes for participation in the study.

Statistical analysis

SPSS 22.0 (IBM SPSS, Chicago, IL) and Microsoft Excel 2010 (Microsoft Corporation, Seattle, WA) software for Windows were used for statistical analysis. Data were assessed for normality distribution by Shapiro-Wilk test and histograms where appropriate. Nominal variables were expressed as numbers and proportions whereas continuous variables were presented as mean and standard deviation. Unpaired Student's t-test or One way Analysis of Variance (ANOVA) were used to compare means of different variable and Pearson's correlation coefficient was applied to correlate time spent on social media with average cumulative grades of

students. P<0.05 was considered statistically significant.

Results

Initial evaluation of the responses revealed that some responses were incomplete so they were eliminated and the final number of participants was 50 students. Demographics of participants are shown in table 1. Males constituted 56% while females constituted 44%. The majority of participants (78%) were residents in Hilla and the residents in Babyl Districts formed 18%.

Table 1: Participants' characteristics

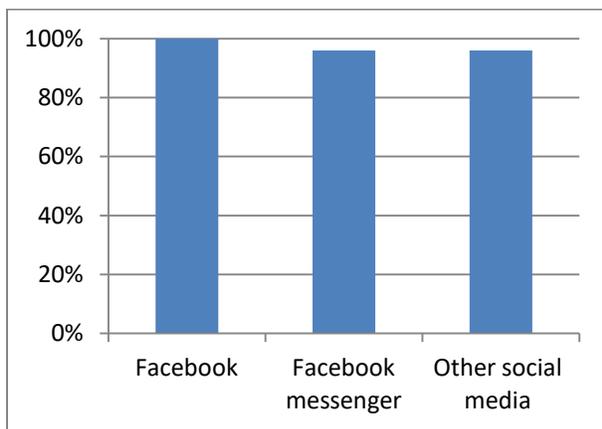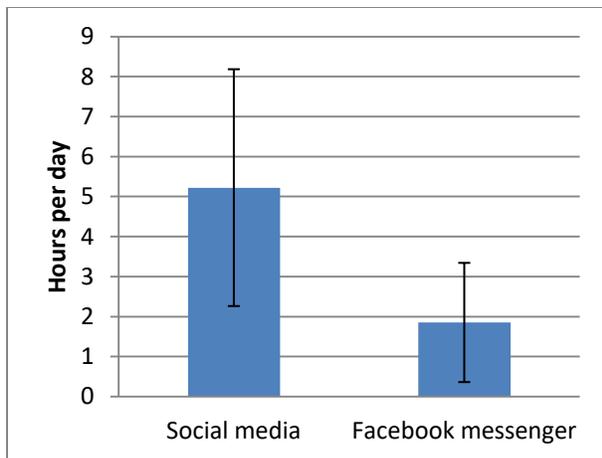| Variable		No (%)
Gender	Male	28 (56)
	Female	22 (44)
Residence	Hilla	39 (78)
	Babyl districts	9 (18)
	Kerbala	1 (2)
	Najaf	1 (2)

Fig 1. Social media used by students

Fig 2. Time spent by students on social media and facebook messenger

In this study, all students have been using facebook and 96% have been using facebook messenger application (Fig 1). Moreover, 96% of students have been using one or more of other social media apps in addition to using facebook. The average time spent by students on facebook was 5.22±2.96 hours per day whereas the average time spent on facebook messenger was shorter (1.85±1.49 hours per day) (Fig 2).

Regarding students interaction with social media, proportion of students who deactivate facebook during exam was higher than those who do not deactivate the application (60%, 40% respectively) (Fig 3A). The majority of students (84%) think that social media reduce face-face social interaction between people in comparison to 16% who think that social media have no influence on social interaction (Fig 3B). Regarding students opinions on the effect of social media on their academic grades, 44% reported a positive effect, 32% reported a negative effect whereas 24% stated that social media have no impact on their grades (Fig 3C).
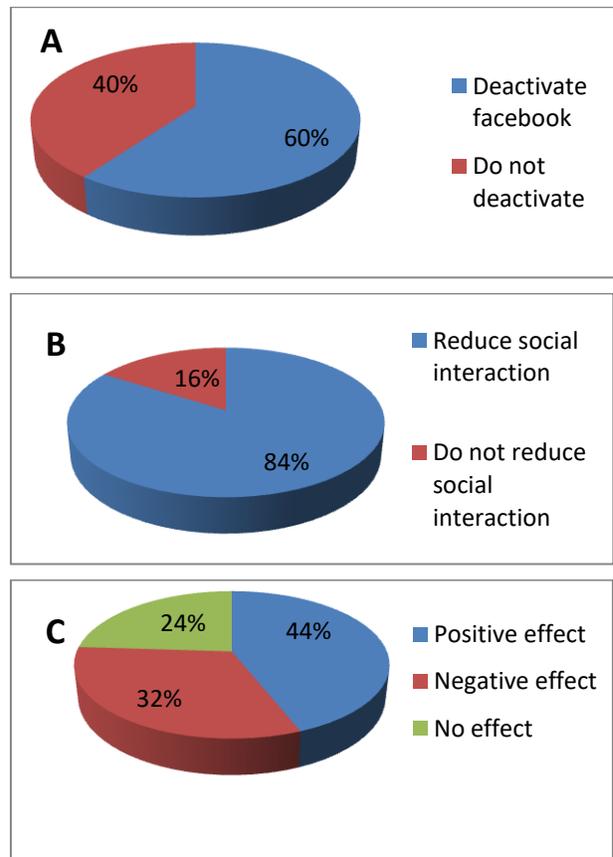

Fig 3. Students interaction with social media. A. Deactivation of facebook by students during exam. B. Students perception of impact of social media on social interaction. C. Students opinions regarding the impact of social media on their university grades.

Table 2: Social media use and academic performance stratified by students opinions of the effect of social media on their grades

Time spent (hours/day)	Students opinion			P value
	Positive	Negative	No effect	
Social media time	5.81 ± 2.99	5.23 ± 2.81	4.27 ± 3.3	0.39
Facebook messenger time	2.21± 1.33	1.66 ± 1.33	1.3± 1.71	0.28
Study time	6.08± 4.36	3.63± 3.65	5.35± 3.13	0.23
Combined grades	31.9± 13.5	28.8± 4.33	27.5± 8.69	0.57

The main reasons for using social media were visiting medical pages and groups, following friends posts and killing spare time which formed 57%, 53% and 44% respectively. The mean of daily study time spent by students was 5.51±4.75 hours per day and the mean of combined grades of students of physiology, anatomy and biochemistry (out of 40) was 29.85± 10.63. Table 2 demonstrates social media usage time, study time and mean of combined grades of three subjects stratified by students opinions of the impact of social media on their grades. There was no significant differences among students who reported positive, negative or no effect for social media in regard to time spent on social media (P=0.39), time spent on facebook messenger (P=0.28), study time (P=0.23) or the mean of combined grades (P=0.57).

In the current study, there were no significant correlations between time spent on social media (r=0.11, P=0.49) or facebook messenger (r=-0.15, P=0.37) and students grades (Table 3). Moreover, there were no significant correlations between study time and time spent on social media (r=-0.008, P=0.95) or facebook messenger (r=-0.007, P=0.96).

Table 3: Correlations between students social media use and measures of academic performance

	r	P
Social media time vs. combined grades	0.11	0.49
Facebook messenger time vs. combined grades	-0.15	0.37
Study time vs. social media time	-0.008	0.95
Study time vs. messenger time	-0.007	0.96

Discussion

Social media depends on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, create, discuss, and modify user-generated content. The number of social networks and their use among university students has witnessed a dramatic increase over the last decades. This expansion raises concerns regarding how students are using these networks and the impact of these networks on students academic performance.

In the current study, the proportion of students living in Hilla was higher than those living in Babyl Districts or other cities. All students have been using facebook and the vast majority of students have been using facebook messenger as well as other social networks. These findings indicate that facebook and facebook messenger are very popular among second stage medical students. Moreover, the vast majority of students have been using one or more of other social networks like twitter, youtube or instagram. The use of multiple applications could be attributed to the various options and features offered by different applications on various platforms. Our findings are in agreement with previous studies[6,21] which showed high proportions of university students using social networks reflecting increasing popularity of these networks worldwide.

The mean time spent by students on social networks was 5.22±2.96 hours per day which suggest that medical students have been spending significant time on these social networks. Time spent on facebook messenger, on the other hand, was shorter (1.85±1.49 hours per day). Our results are consistent with a study performed on the students of University of Baghdad which demonstrated that a significant proportion of students spent more than three hours per day on social networks[22]. In a study conducted among students in the polytechnics of Ghana, the vast majority of students spent 2-5 hours on social networks[6] while another study reported that around 66% of tertiary institutions students were spending less than one hour on social media sites[1]. Our results are also consistent with other papers which demonstrated the predominance use of facebook over other social media sites and applications[1,21].

The proportion of students who deactivate facebook was higher than those who do not deactivate facebook formed 40%. This finding reflects medical

students dependence on the use of social networks and inability to control their usage in a significant proportion of students. In regard to students opinions on the impact of social media on social interaction, 84% of medical students reported that social networks reduce social interaction among students. Recent data have linked social networks usage among students to depression, sleep disorders, dependence and negative impact of social interaction[6,23]. Students who reported positive effect for social networks on their grades constituted 44%. These students attributed positive effect to the use of facebook and other social networks in visiting medical groups and pages, interacting and collaboration with other students and the use of social networks as a learning tool. Our results are consistent with those of a study conducted by Abbas et al among medical students at University of Babylon, Iraq in which the majority of students reported positive or no effect on their grades based on their opinions[20]. Another study, however, reported that 74% of university students in Saudi Arabia have their study time negatively impaired by social media sites[14].

The main reasons for using social networks by students were visiting medical pages and groups, following friends posts and communicating with them as well as killing spare time for around half of students. This indicates that some students have been using social networks for academic purposes to promote their core academic knowledge and to access to online medical resources as well as discussion with their peers. In contrast, some students have been using social networks for interaction with posts and update of their friends on these networks and for entertainment like watching movies or browsing news websites.

The mean of study time was 5.51±4.75 hours per day suggesting a wide range of variation in the time spent by students in reviewing courses materials and assignments as some students are spending longer time than others. There were no significant differences in social network usage time, facebook messenger usage time, study time and the mean of students combined grades among students who reported positive, negative or no effect for social networks on their grades. These findings suggest that social networks use and study time are not different among students and is consistent with the finding of no significant differences in student combined grades despite that some students perceive that social networks have negative or positive impact on their grades. Students who reported that social networks have negative impact on their grades think that they are spending exces-

sive time on these networks and that they cannot control the time they spent on these networks. In contrast, students who reported positive effects for social networks believe so because they think social networks can facilitate their study and interaction with other students to review course material, exchange information, and answer their queries. The results of previous studies on the impact of social networks on students grades have been contradicting. Some studies have illustrated a positive effect for social networks on students GPA[7,12,20,24]. Other studies, however demonstrated negative[1,15,21,25] or no effect[6] on student grades. A study conducted on 510 medical students at the same medical college and showed that social network use has positive influence on students grades and academic performance[20].

There were also no significant correlations between social networks and facebook messenger use time and students combined grades. There were also no significant correlations between study time and social media time and messenger time. These findings are consistent with the findings above and suggest that students have been using social networks for various academic and non-academic purposes and that some students have some control on social media use time that ultimately minimize the effect of these networks on their grades. These results are in contrast with a study on tertiary institution students which revealed a significant correlation between study time and students grades and correlation between social media use and students grades[1]. Other studies on college students in Southern California demonstrated inverse correlation between time spent on facebook and students GPA[25].

Conclusion

The use of social networks and particularly facebook is increasingly popular among medical students at University of Babylon. Students are aware of the impact of these networks on their academic performance as well as social interaction. However, the use of these networks seems to have no influence on study time or students grades which could be due to controlled use of social networks or using these networks as a learning tool.

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