



## Original article

# The impact of social media on the academic performance of second year medical students at College of Medicine, University of Babylon, Iraq

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### Abstract

Social media applications and their use among students have witnessed dramatic increase in the last decade and data on their effect on students academic performance are inconsistent. The aim of this study was to assess the impact of social media on the academic performance and grades of second year medical students at the College of Medicine, University of Babylon, Iraq. Second year medical students (n=57) completed online questionnaire about the type of social media they use frequently, time spent on these media in hours per day, the reasons for use of these media and the effect of social media on their grades. Students were also asked to provide the cumulative grades of physiology and anatomy courses. Time spent by students on social media and facebook messenger was correlated with combined grades of physiology and anatomy courses. All students have been using facebook and 96.5% have been using facebook messenger. Other popular applications were telegram, instagram and ask.fm. Average time spent on social media was  $5.07 \pm 2.93$  and on facebook messenger was  $1.80 \pm 1.45$  hours per day. Forty-two percent of students reported that social media have positive effect on their academic performance. No correlation has been found between time spent on social media or facebook messenger and students combined grades of physiology and anatomy. To conclude, social media and in particular facebook and facebook messenger are very popular among second year medical students. Time spent on social media seems to have no influence on second year medical students grades and academic performance.

**Key words:** Facebook, facebook messenger, grades, medical students, social media

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In the last ten years, the online world has changed dramatically due to the prodigious expansion of social media and their users. Social media consist of a set of websites and applications that allow the users to share contents, ideas, feelings, experience and communicate with large

number of users. The rapid expansion of social media is attributed to their ease of use, instant sharing, increasing popularity and the ubiquitous access through computers, mobile phone and tablets<sup>1</sup>. Social media also bring down communication and distance barriers and allow real-time conversa-

tions and interactions<sup>2</sup>. 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<sup>3</sup>.

The most popular social media include facebook, facebook messenger, twitter, whatsapp, instagram, QQ, wechat, skype and viber<sup>4</sup>. Previous work has shown that between 67%-75% of college-aged individuals are users of social media and another study observed that 90% of college students are using facebook<sup>5</sup>. Established in 2004 by Mark Zuckerberg and his colleagues at Harvard University, facebook is the most popular social media around the world with total number of users of 1.65 billion and age group 20-29 years constitutes about 30% of users<sup>4</sup>. The platform allow users to post on walls, update their status, upload photos, videos and comment on these posts. In Iraq, social media are also very popular and a recent survey by Arab Advisors Group of Iraqis above 18 years old reported that 77.9% of the responders are using one or more social network<sup>6</sup>.

Advantages of social media apparently include fast and effective communication among people, dynamic social and collaborative environment and convenient access to information as well as promoting tool for businesses<sup>7</sup>. Disadvantages of social media use, however, encompass reduction of face-to-face interaction among people, sleep problems, anxiety and depression, concerns about privacy, fake identity, time consumption and most importantly addiction to social media that interferes with performing daily tasks<sup>8</sup>.

The rapid advancement of social media websites and applications together with the increasing popularity of social media among students have raised concerns regarding the influence of these media on the academic performance of students. Major concern for professors and parents is the excessive time spent on facebook and other social media at the expense of completing their academic tasks. The results of the studies on the effect of social media on student performance and grades have been contradicting. In a study conducted at Malaysian university, the respondents indicated the social media enhance students grades because social media enhance communications and discussion among students with their instructors<sup>9</sup>. However, another study reported that excessive use of social media ultimately lead to gradual decrease in students grades<sup>10</sup>. As for facebook in particular, facebook users tend to have lower grade point average (GPA) and spend shorter time for their studies<sup>11</sup> and an inverse relation between

logins and amount of time spent on facebook and students grades has also been observed<sup>12</sup>. Other studies, on the contrary, found no effect for facebook use on academic performance of students or GPA grades<sup>13-15</sup>.

Data on the influence of facebook and other social media on Iraqi students academic performance are limited. A recent study conducted by Abbas et al<sup>16</sup> surveyed 510 medical students at our medical school and reported a positive effect for the use of social media on student academic performance based on students opinions although students' grades were not obtained in their study. The aim of this study was to assess the impact of social media on the academic performance and grades of second year medical students at the College of Medicine, University of Babylon, Iraq. To our knowledge, this study is the first study that explores this effect among Iraqi medical students.

### Materials and methods

A cross-sectional study was conducted among second year medical students at the College of Medicine, University of Babylon, Iraq in July 2016 at the end of the academic year 2015-2016. A questionnaire was designed for the current study to solicit data and was hosted in survey hosting website ([www.surveygizmo.com](http://www.surveygizmo.com)) to allow students to fill the questionnaire online using computers, mobile phones or tablets. To improve the reliability and validity of the questionnaire, it was pre-tested on a selected sample of students that helped to enhance the design of the questionnaire and all ambiguities and misunderstanding were eliminated. 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 of 20 questions and was mostly multiple choice types with some open-ended questions. Multiple choice questions allowed students to pick answer from list like positive, negative or no effect for social media on their grades. Open-ended questions on the other hand allowed students to independently express their opinions e.g. why they think social media has positive or negative influence on their grades. Using study questionnaire, information were collected 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 two

major subjects (physiology and anatomy) to correlate time spent on social media with students' grades. The average of the grades of the two subjects for each student was obtained to minimize subject effect and to obtain representative estimate of the academic performance of students. Nominal grades of students like Good and Very Good were not used because these represent a wide range of grades. 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 variables 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 screening showed that some responses were incomplete so they were excluded. Therefore, the final sample consisted of 57 participants. Female participants were higher than males (59.6% vs. 40.4% respectively) and the majority of participants were resident in Hilla (75.4%) while residents in other Babyl Districts constituted 21% (Table 1). The type of social media used frequently by students with their percentages is shown in figure 1.

Table 1: Participants characteristics		
Variable		N (%)
Gender	Male	23 (40.4)
	Female	34 (59.6)
Residence	Hilla	43 (75.4)
	Babyl districts	12 (21)
	Kerbala	1 (1.8)
	Najaf	1 (1.8)

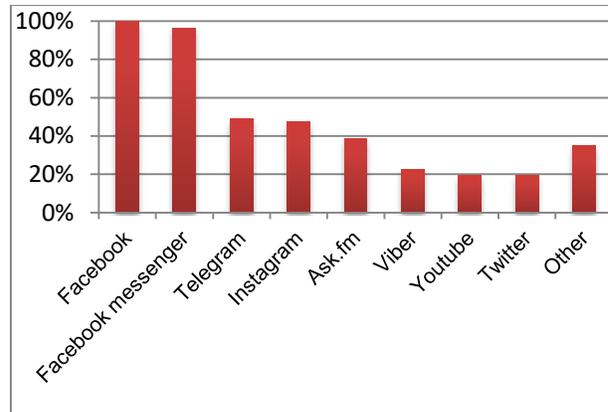


Fig 1. Types of social media frequently used by students

All the participants were using facebook and 96.5% were using facebook messenger as well. Other popular social media applications among students were telegram (49.1%), instagram (47.4%), ask.fm (38.6%), viber (22.8%), while Youtube and twitter were used by 19.3 % for each of the two media. The average time spent by students on facebook and other social media was which was higher than time spent facebook messenger was (5.07±2.93 vs. 1.80±1.45 hours respectively) (Fig 2).

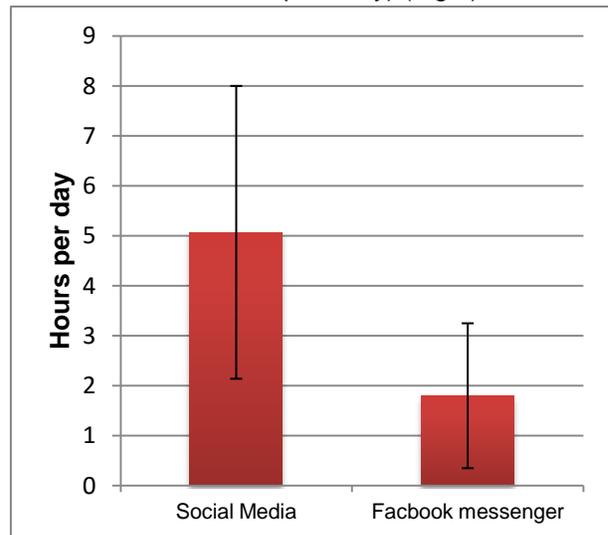


Fig 2. Average time spent by students on social media and facebook messenger

Regarding the effect of social media, students who do not deactivate facebook occasionally like during exams constituted 58% (Fig 3). Moreover, students who think that facebook and other social media have positive effect on their academic performance formed 42%, those who think it has negative effect comprised 33% while 25% think that social media have no effect at all on their university grades (Fig 4). The reasons for social media usage among students and their percentages are presented in figure 5. The two main reasons were visiting medi-

cal pages and groups (57.9%) and to communicate with friends and follow their posts and updates (54.4%). Other reasons were killing spare time (45.6%), studying in groups on facebook messenger (40.4%), news (38.6%), fashion and styles (22.8%) and sports (15.8%).

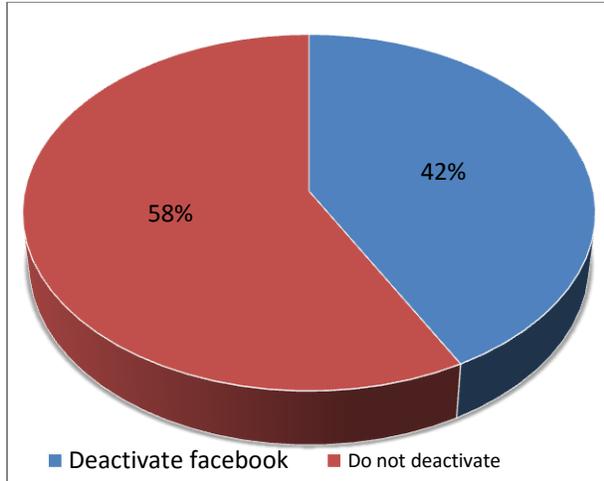


Fig 3. Deactivation of facebook by students during exams

The average cumulative grade of students in physiology (out of 40) was  $30.26 \pm 9.93$ , the average cumulative grade of anatomy was  $29.01 \pm 10.34$  and the mean of the combined grades for both subjects was  $29.64 \pm 10.09$ . There was no significant difference between students grades in the two subjects ( $p=0.76$ ). Time spent on social media and students' grades stratified by their opinions on the

effect of social media on their grades are shown in table 2. Students who reported that social media has positive or negative or no effect on their grades did not differ in the time spent on social media ( $p=0.26$ ), on facebook messenger ( $p=0.53$ ) or their combined grades of physiology and anatomy ( $p=0.73$ ). There was no statistically significant correlation between average combined grades of physiology and anatomy with the time spent on social media ( $r=0.110$ ,  $p=0.487$ ) or on facebook messenger ( $r=-0.112$ ,  $p=0.480$ ) (Table 3). However, there was significant direct correlation between time spent of social media and time spent on the messenger ( $r =0.31$ ,  $p=0.028$ ).

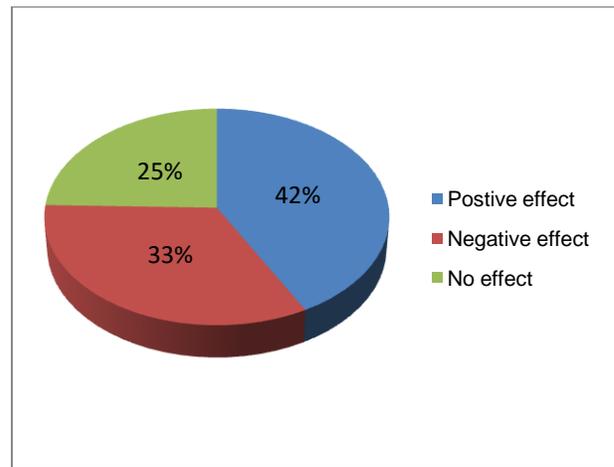


Fig 4. Students opinion on the effect of social media on their grades

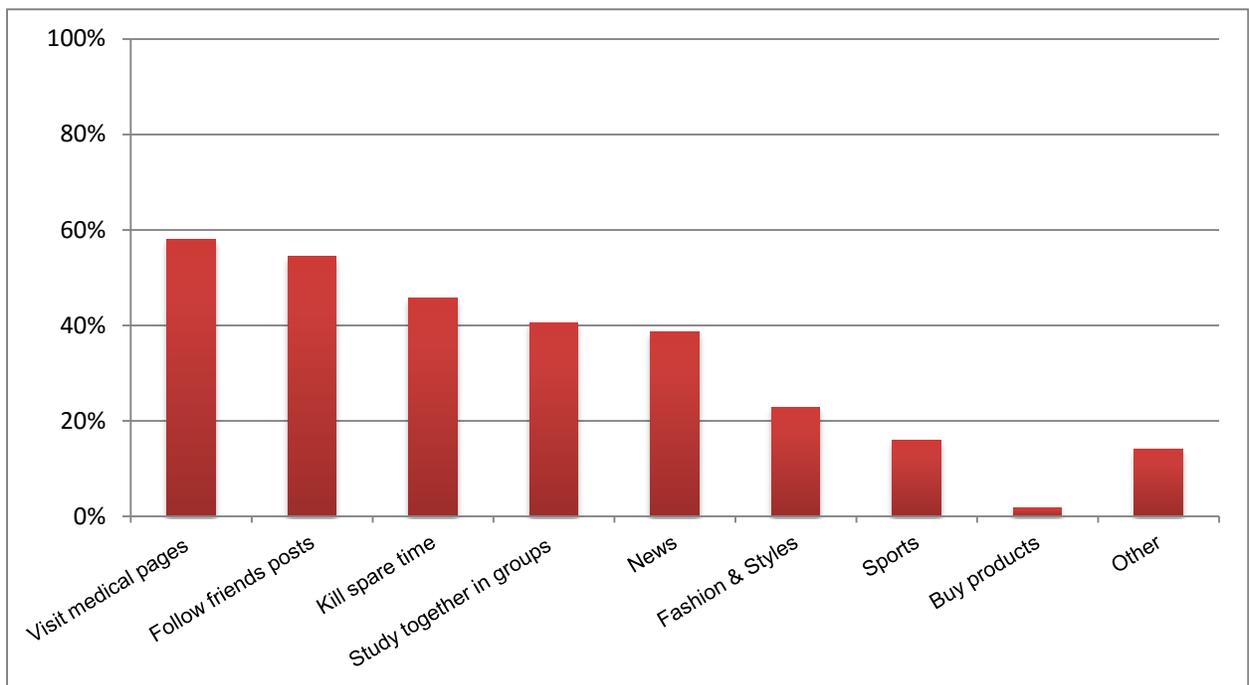


Fig 5. Reasons for use of social media by students

**Table 2: Time spent on social media and students grades stratified by their opinions on the effect of social media on their grades**

	Students opinion			p value
	Positive	Negative	No effect	
Social media time (hours/day)	5.7 ±3.07	4.94± 2.65	4.07± 2.98	0.26
Facebook messenger time (hours/day)	1.99± 1.35	1.62± 1.30	1.48± 1.63	0.53
Combined physiology and anatomy grades (/40)	29.4±4.48	27.4±4.45	27.7±7.85	0.73

Results are expressed as mean±SD

**Table 3: Correlations between time spent on social media and facebook messenger with students combined grades of physiology and anatomy**

	r	p
Social media time vs. combined grades	0.110	0.487
Facebook messenger time vs. combined grades	0.112	0.480
Facebook messenger time vs. social media time	0.31	0.028*

r=Pearson's correlation coefficient, \*Statistically significant

## Discussion

Social media websites and applications as well as the number of students using them have witnessed a dramatic increase over the last decade and became an integral part of students' daily life. In the current study, not all second year medical students have participated in this current the study and a possible reason for that is that the study was conducted after the end of academic year so some students may have not accessed their group on facebook or some students decided not participate in the study. Moreover, incomplete responses were excluded from the study.

All the students have been using facebook and the vast majority (96.5%) have been also using facebook messenger. This finding reflects the increasing popularity of facebook and its messenger among students and is consistent with the fact that facebook has the largest number of users in the world<sup>1,4,17</sup>. A recent study surveyed 100 students of Baghdad and Mustansiriya Universities, Iraq reported that facebook was the preferred social media site in 61.5% of males and 54% of females students followed by twitter and youtube<sup>18</sup>.

Telegram and instagram were also commonly used by around half of students. These applications share with facebook the feature of allowing users to post photos, comment on them and to send messages to other users. Other social networks that were also used in decreasing proportions include ask.fm, viber, youtube and twitter. It is essential to mention that some students have been using more than one social media application along with facebook and facebook messenger that

they check regularly. Our finding is consistent with recent study in Baghdad and Mustansiriya Universities which observed that 32% of males and 28% of females students were using two social media websites<sup>18</sup>. Moreover, another study surveyed college students in Oman and reported that 42% of the respondents were using two sites, whereas 26% were using three sites<sup>17</sup>.

Mean time spent of facebook was 5.07±2.93 hours and on facebook messenger was 1.80±1.45 hours per day. This suggests that students are spending significant period of time daily on facebook and other social media and to less extent on facebook messenger. If this period of time were spent on non-academic pages or the students were not balancing time spent on social media with study time then it would be expected to impose negative impact on students grades. A recent study surveyed students of six stages at our medical school and reported that most students spent 2 hours per day on social media but some more than 6 hours<sup>16</sup>. Another study among Iraqi universities students showed that 56% of males 36% females students were using social media for more than 3 hours per day<sup>18</sup>. The time spent on social media reported in our study is longer than that observed by a study in Koforidua Polytechnic Institution which demonstrated that 98.5% of students spent between 30 minutes-3 hours<sup>1</sup> and another study reported 60 minutes per day usage in US universities<sup>5</sup>.

The main two reasons for using social media by students were to visit medical pages and groups (57.9%) and to follow friends' posts and communicate with them (54.5%). Significant proportion of students has been using social media to kill spare

time, browse news, fashion or sports. The proportion of students who do not deactivate facebook occasionally like during exams was 57.9% which reflects the degree of dependence of students on facebook and that they are unable to have off periods of lack of access to the application. Addiction to facebook and other social media have been reported in previous work<sup>8</sup> and is associated with reduced academic productivity of students.

In the current study, proportion of students who stated that social media have positive influence on their academic performance was higher than those who reported negative effect or no effect (42%, 33% and 25% respectively). Those who reported positive effect attributed this effect to the ability to browse medical pages and study together with groups as well as social interaction with other students. On the other hand, those who reported negative effect complained of excessive time spent on facebook and other social media on non-academic purposes, distraction and inability to control time spent on the application while those who stated no influence for social media on grades reported controlled use for social media in balance with their study time. Our results are in agreement with studies which showed higher proportion of students in Iraq<sup>16</sup> and Oman<sup>17</sup> who stated that social media convey positive influence on their academic performance than those who stated negative or no effect for these media. Another study, however, showed that the majority of students reported a negative effect for social media on their academic work<sup>1</sup>.

Students who stated that social media have positive, negative or no effect on their grades and academic performance did not differ in the time they spent on social media or their combined grades of physiology and anatomy. There was also no correlation between social media or facebook messenger usage time and students combined grades. These finding suggest that student grades were not influenced by their daily social media usage. Our findings are in congruent with those of a recent study which surveyed students from six stages in our medical school and showed that time spent on social media did not affect students academic performance albeit the observation was based on students opinions rather than on students grades<sup>16</sup>. Hargittai et al. conducted a study on 1060 first year university students in US and reported no association between social media time or practice and students academic performance<sup>13</sup>. They also observed no correlation between facebook usage and students GPA grades in another study<sup>14</sup>. Moreover, our results are also consistent with a recent study

which showed that 64.6% of tertiary institution students reported beneficial use of social media sites for academic work but there was no correlation between social media usage time and students grades<sup>19</sup>. Our observation of lack of association between social media usage time and students grades could be explained by our finding that the main reason for using social media websites in our sample was to visit medical pages and groups (57.9%) or to study together through facebook messenger (40.4%). Further, students could have made balance between the time they dedicated for study and the time they spent on social media so that no interference with accomplishing their university assignments and examinations.

Our results, however, contradicts with other studies which demonstrated negative correlation between social media<sup>1,20</sup> or facebook<sup>5,21,22</sup> and students grades. These studies attributed this negative correlation to the excessive time spent by students on social media and that students were most of the time chatting with their friends, commenting on their posts and interacting socially with them rather than using social media to supplement their university lectures contents or searching for some resources that enhance their medical core knowledge. On the contrary, some studies have found positive effect for social media<sup>2,17</sup> or facebook<sup>23</sup> on students grades. These studies explained this positive association by the fact that students were using social media for academic purposes, to collaborate to complete their assignments and to enhance their interaction with their teachers so it was an electronic learning tool rather than a source for distraction. Facebook and other social media also help junior students to deal with the challenges they faced in the new environment of university via interacting with their peers. Time spent on social media correlated positively with time spent on facebook messenger and this reflect the common features of these social media applications and the use of multiple social media by students.

It is clear that the results of previous studies on the influence of social media on students' academic performance have been contradicting. A possible explanation for that is the different method used to assess social media usage and to evaluate students' academic achievements<sup>19</sup>. Another source of difference is whether time spent on social media and grades were reported by students or were automatically recorded or obtained from university records and whether to split social media usage times into those for academic purposes or multitasking at the same time or not.

## Conclusion

Social media and in particular facebook and facebook messenger are very popular among second year medical students of College of Medicine, University of Babylon. Students have been spending significant time on these media for both academic and non-academic purposes. No correlation between time spent on social media or facebook messenger and students' grades of physiology and anatomy have been observed which could be attributed to proper time management adopted by students and the use of social media as a learning tool.

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**Conflict of interest:** None

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