

# Evaluation of the level of Internet Addiction and its effects on academic performance among Medical and Paramedical College Students in Iraq

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## ABSTRACT

**Introduction:** Nowadays a considerable population in the world uses the internet. Unfortunately, despite many interests and its specific advances in communication, the Internet is sentenced to have serious side effects. **Objective:** To detect the percentage of internet addiction and its effect on academic performance among Medical and Paramedical students in some Iraqi universities. **Methods:** A cross-sectional study was conducted among 806 medical and paramedical students who were subjected to the online survey which includes demographic information associated with internet usage, and Young's Internet Addiction Test (YIAT) was applied to survey the grade of internet addiction. **Results:** Results reveal a moderate level of addiction among students without significant variations between genders, high significant relationship ( $p < 0.01$ ) between students concerning their housing area, and strong significant variations ( $p < 0.01$ ) in the time of using the internet, besides strong significant differences ( $p < 0.01$ ) between internet addiction and academic performance. **Conclusion:** Medical and paramedical students practice the internet for diverse activities including learning despite their moderate grade of addiction there are no significant differences between genders. They employ it over 5 h/day, which affects negative tasks on their academic performance.

**Keywords:** internet addiction disorder; academic performance; housing; students.

## INTRODUCTION

The irresistible demand to be online in a way that interferes with conventional life which may unfavorably affect house and friends refers to Internet addiction that shows similar symptoms to alcohol and drug addiction, depending to a new study, specialists confirm that anything makes human being alert and feel energetic can be addictive<sup>1</sup>.

Despite its enormous economic and social benefits besides its consideration as a huge informative resource, however, its negative effects rapidly appear<sup>2</sup>. As stated studies revealed that uncontrolled and extravagant use of the internet is correlated with the

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fragility of social, professional, occupational, and, psychological performances<sup>1</sup>. These pathological manifestations of the internet refer to Internet addiction or Internet dependence<sup>3</sup>. Diagnostic and Statistical Manual of Mental Disorders, (DSM-IV-TR) 4th and last edition introduced Internet addiction as a group of “impulse control disturbance not broached as another form”<sup>4</sup>.

One of the most vulnerable groups to develop an internet addiction is university students because of their exposure to their personal computers and the internet from a young. They have grown up with technology and rely on the internet in almost every part of academic life<sup>1,5,6</sup>. They are considered the most vulnerable to the extreme use of the Internet, considering the limited level of observation of their online behavior and the modern liberty practiced by parents’ domination as the generality of them lodging outside of their families in hostels of university. Most educational institutes expand Wi-Fi connections within campuses, thus donating students free access to the Internet. Studies found that students spend a lot of their time on the internet browsing while the costs were quitting the class or fail in their exam<sup>5,7</sup>. According to Young<sup>3</sup>, 58% of students reported a reduction in the level of schooling, a significant decline in degrees, failing or being placed on probation, and even facing ejection from the university because of unmanageable use of the Internet.

Therefore, this study aimed (1) to detect and evaluate the levels of Internet addiction among Medical and Paramedical students and (2) to detect the effects of Internet addiction on academic performance.

## METHODS

### Study design

A descriptive cross-sectional is the design of the study, which was conducted from 13th November to 11<sup>th</sup> December 2016 in Baghdad/Iraq. 806 Medical and paramedical students (randomly collected) from Iraq Universities (Baghdad, Mosul, Kirkuk, Basrah, Kufa, Karbala, Najaf, Bable, Alqadisyah, Kirkuk, Maysan, Muthanna, DhiQar, Wasit.) were subjected to investigation through Google form online questionnaire was posted through a website link survey supplied on social media website such (Facebook, Twitter, What’s Up, Viber, Instagram).

### Eligibility criteria

Only medical and paramedical students have been allowed to survey the study.

### Ethics

All participants agreed to take part in this study and the Declaration of Helsinki was followed.

## Data collection

The survey comprises three sections. The first section aimed to get some profiles of the respondent specifically the personal student background, educational level of parents, daily internet use, and how it is used for the respondent activities. The second section contains the Young internet addiction questionnaire (YIAQ) and the third section aimed to get information about academic performance.

### Young internet addiction questionnaire (YIAQ)

This survey form has 20 items on the Likert scale. The accuracy and legality of YIAQ are measured by various studies in Iran<sup>8,9</sup>. Besides, the Arabic version of the questionnaire is validated by the study which has been conducted among intermediate- and secondary school students across Lebanon<sup>10</sup>. Participants should select one alternate in each item of the five-mark Likert scale assorted from never, seldom, sometimes, often, and always. The minimum score is 20, while the maximum is 100; the higher result the greater scale of Internet addiction. As proposed by Young, severance scores for the Internet addiction questioners test (IAQT) were applied to assort Internet users based on the intensity of their addictive behavior. In the current study, similar severance scores were utilized: lower users (scores 20 to 39) – average online users who have entire control over their Internet use, moderate users (scores 40 to 69) – those suffering intermittent or constant troubles because of Internet use, while the immoderate users (scores 70 to 100) – those who have significant problems caused by Internet use<sup>11,12</sup>.

The academic performance of the students was measured through the percent marks got in 2 professional Bachelor of Medicine and Bachelor of Surgery (MBBS) examinations. Students with scores 50 and above were considered as ‘pass’ and below 50 as ‘fail’.

To measure the usage of the Internet for academic purposes, we developed 11 items. This instrument was based on a 5-point Likert scale, with the highest score (5) representing a positive attitude (strongly agree) and the lowest score (1) denoting a negative attitude (strongly disagree). These items include the following: 1- I seek information from the Internet for learning activities; 2- I search for materials from the Internet to complete my assignment; 3- I inform my friends concerning useful websites related to the courses taken; 4- I put bookmarks to websites related to my course of study so that I could access them easily in future; 5- I use email to communicate with my lecturers; 6- I exchange e-mails with my colleagues to discuss matters related with my academic work; 7- I use the Internet as the main source of information for my studies; 8- I frequently use the Learning Management System as part of my learning activity; 9- I seek the latest information online to enhance my knowledge related to the courses taken in the university; 10- I use forums to exchange opinions on academic matters with my friends; 11- I access the library website to search for academic books.

The academic performance scale comprises 8-items developed by Appleton et al.<sup>13</sup>, by using a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). A high score on this scale shows high levels of students' perceived academic performance. These items involve the following: 1- I prefer spending time on the internet, then going to college; 2- I neglect my homework to spend more time on the Internet; 3- I find my discussions with colleagues around the internet and what's going on in it; 4- My academic level has declined due to my increasing use of the internet; 5- I tried to reduce the use of the Internet to raise the level of study, but I found difficulty in that; 6- How much you use the Internet to search for the references and scientific resources you need in the study; 7- I am late to go to university because of the online internet vigilance; 8- I lose focus in my study due to my use of the internet.

### Statistical methods

Frequency and percentage are used for socio-demographic characteristic descriptions. It used modified criteria of Young et al.<sup>1</sup> Internet Addiction Test (YIAT) to detect the level of internet addiction of participants. The Chi-square test was used to analyze the association between socio-demographics and the level of addiction through the program Statistical Package for the Social Sciences (SPSS 21). p-values were considered statistically significant when it <0.05 and <0.01. Monte Carlo Principle (MCP) was used to find out the correlation between the level of addiction and the degrees of academic performance of participants.

## RESULTS

The results of this study appear in the following tables. Table 1 shows the highest percentage 38.6% of the age group 22-25 years followed by 38.2% of the age group 20-21 while 23.2% represents the age group 17-19. The distribution of the sample study according to gender shows females participating in this study in a percentage of 75.1% in front of 24.9% of males. 86.0% of students lived in a dorm and 14.0% in a family home.

**Table 1:** Distribution of sample according to age groups, gender, and accommodation

	N	%
<b>Total</b>	806	100.0
<b>Age (years)</b>		
(17-19)	187	23.2
(20-21)	308	38.2
(22-25)	311	38.6
<b>Gender</b>		
Male	201	24.9
Female	605	75.1
<b>Type of accommodations</b>		
Living in a dormitory	693	86.0
Living in the family home	113	14.0

Table 2 demonstrates the highest percentage of participants who use the internet at home (87.6%) while 1.6% of the studying sample use it on campus. Coffee shops and libraries were the least common places for internet use, respectively 0.2 and 0.1%. Duration of usage was variable among students. 51.1% of the sample uses the internet over 5 years, 45.2% for 2-4 years, and 3.7% for less than one year. The purposes of internet usage show that 78.2% of participants use the internet for different activities which include learning, social entertainment and communication, and access to political news, besides, 17.5% of participants use it only for social entertainment and communication. The remaining 2.1% use the internet for learning and access to political news respectively.

Table 3 shows that majority of the respondents 558 (69.2%) rated to be moderate users who have to experience occasional or frequent problems because of the Internet, while 155 (19.2%) rated them as mild internet users. 11.5% rated as the highest Internet users which causes significant problems in their life.

Table 4 shows that most of the participants 322 (40.0%) rated a medium level of academic performance, 285 (35.4%) rated it a bad, and 119 (24.7%) rated it a very good level.

**Table 2:** Distribution of sample according to places on Internet use, the period of use (years), usage time/day, and the purpose of the usage.

	N	%
<b>Total</b>	806	100.0
<b>Places where the Internet is used</b>		
Home	706	87.6
University Campus	13	1.6
Coffee shop	2	0.2
Libraries	1	0.0
All of the above	94	11.7
<b>Duration of internet use (years)</b>		
I started using the internet a year or less ago	30	3.7
2-4 years	364	45.2
I have been using the internet for more than 5 years	412	51.1
<b>Total</b>	806	100.0
<b>Time for using the Internet in the day</b>		
Less than 2 hours per day	38	4.7
2- 5 hours a day	254	31.5
More than 5 hours a day	514	63.8
<b>The purpose of using the Internet</b>		
Learning and study	18	2.2
Social entertainment and communication	141	17.5
Access to political news	17	2.1
All of the above	630	78.2

**Table 3:** Respondents' Internet Addiction Level according to the modified criteria of Young's (1998) Internet Addiction Test (IAT)

Levels of Internet addiction	N	%
Mild (<40)	155	19.2
Moderate (41-79)	558	69.2
Severe (≥80)	93	11.5
<b>Total</b>	806	100.0

Table 5 shows no significant differences between males and females in the level of addiction although the highest level of addiction was a moderate level in both gender 17.6, 51.6% followed by mild levels of 3.7, and 15.5% for males and females respectively. And severe addiction scored the lowest percentages 3.6 and 7.9% respectively.

Also, it is shown highly significant differences ( $p < 0.01$ ) in IA between accommodations types of students. Internet addiction on all levels (severe, moderate, and mild) was higher among students living in the family home than those who live in the dorms (8.7, 60.2, 17.1, and 2.9, 9.1, 2.1%) respectively.

Table 6 shows the highly significant effect ( $MCP < 0.01$ ) of the level of addiction on academic performance as the effect of moderate level shows 40.0% distributed 36.4, 1.9, and 1.7% for the perfect, good and bad degree of performance respectively. Whilst mild level effect appears 35.4% distributed 17.7, 17.1 and 5% for the good, bad and perfect degree of performance. However, the effect of severe levels of addiction shows the lowest percentage of 24.7% distributed 15.1, 9.2, and 0.4% for the good, perfect, and bad degrees of performance.

**Table 4:** Distribution of sample by the level of academic performance

Levels of Academic Performance	N	%
Bad (<16)	285	35.4
Medium (17-25)	322	40.0
Very good (26- ≥30)	199	24.7
Total	806	100.0

**Table 5:** Distribution of Levels of internet addiction among males and females and distribution of Levels of Internet addiction according to the type of accommodation

Characteristic	Levels of Internet addiction			P*	
	Mild	Moderate	Severe		
Gender					
Male	No	30	142	29	p>0.05
	%	3.7%	17.6%	3.6%	
Female	No.	125	416	64	
	%	15.5%	51.6%	7.9%	
Type of Accommodation					
Family home	No.	138	485	70	
	%	17.1%	60.2%	8.7%	
Dormitory	No.	17	73	23	
	%	2.1%	9.1%	2.9%	

**Table 6:** Distribution of Levels of Internet addiction according to degrees of Academic performance

Levels of Internet addiction		Degrees of academic performance			Total
		Bad	Good	Perfect	
Mild	No.	138	143	4	285
	%	17.1%	17.7%	.5%	35.4%
Moderate	No.	14	293	15	322
	%	1.7%	36.4%	1.9%	40.0%
Sever	No.	3	122	74	199
	%	.4%	15.1%	9.2%	24.7%
Total	No.	155	558	93	806
	%	19.2%	69.2%	11.5%	100.0%

MCP<0.01

## DISCUSSION

In this study, most participants were around the age group between 22-25 which represents undergraduate age (Junior, Senior) and they use the internet more than other states Bustamente<sup>14</sup>. Females appear the most participants in the current study because of spending a lot their time on the internet and social media Websites than males for the lack of entertainment for females outdoors in the Iraqi community which restricts female outdoor freedom<sup>15</sup>. This result agrees with Appleton et al.<sup>13</sup>, and Asiri et al.<sup>16</sup> on another hand, it disagrees with Chou et al.<sup>17</sup> among medical students. The result shows the abuse of the internet is lower in a dorm (14.0%) than those who live in their residence (86.0%) because of less free time through severe duties should do by themselves in the dorm than those who live in their parents' home. The result agrees with Gedam et al.<sup>18</sup>. Duration of the time spent on browse the internet appears over 5 hours/day show students have been spending a significant period daily on the internet leaving little time to realistic life maybe to finish up the primary duties or the most important stuff first such as researching, E-mailing and scholar work and/ or spending free nonacademic time, on most addictive material such as movies, series, Social entertainment, communication, and shows, that's why spending more hours on the internet has the bigger possibility to develop the addiction. However, high usage of chat rooms and Email is effective on sleep quality<sup>19</sup>. Abbas et al.<sup>20</sup> in a survey study reported students of six stages at medical school spent two hours per day on social media, but some over six hours, which agrees with the present results. While another study among Iraqi university students showed that 56% of male and 36% of female students were using the internet for over three hours per day<sup>21</sup>. Whereas most Iranian students spend 1- 5hrs/per day on Internet usage according to the survey has been conducted in 2016<sup>22</sup>.

A recent study shows the level of addiction among students is moderate level agrees with Mutalik et al.<sup>22</sup>, hence the superiority of this addiction shows among females than males mathematically. This result disagrees with Byun et al.<sup>23</sup> and Tsai et al.<sup>24</sup> who reported a reverse result as they have proven male is an indicator of Internet addiction, besides the risk of internet addiction was 3.5 times higher among male than female students<sup>25</sup>, due to their urgent desire to access to the pornographic sites, however, female users may be hidden symptoms or present restricted symptoms<sup>15</sup>. It also disagrees with further studies by Abbas et al.<sup>20</sup>, Upadhayay et al.<sup>26</sup> and Kamil<sup>27</sup> suggested male students are likely to be more Internet-dependent<sup>28</sup> because they are more experienced in Internet use, receive less parental supervision, and employ it for entertainment widely. Noreen Akhter 2013 found a slight addiction among medical students, but the superiority was among males<sup>29</sup>. The effect of internet addiction on the academic performance of the current study agrees with various studies Appleton et al.<sup>13</sup>, Yeap et al.<sup>30</sup>, Kamil<sup>27</sup>, Mutalik, et al.<sup>22</sup>, since the extreme

recreation and entertainment use of internet hindered the educational attainment, besides Staying late night and absence to the classroom result from internet addiction<sup>29</sup>. Also, excessive use of the internet leads to psychological, physical, and educational problems and risky behaviors, and the negative effect of addiction is more than positive, particularly among students who decline their motivation toward educational attainment<sup>31,32</sup>. The same result has been stated by various studies confirmed that greater use of the internet by dependent users will increase the probability of missing classes and lower grade<sup>24,27</sup>. The students sorted as internet addicted suffers from loneliness, depression, hypersensitivity, anxiety, insomnia, mood swing, and anger when he/she does not get the connector to the network offline. All these factors lose the motivation for educational attainment through psychological disturbances which make student quit or miss the ability to do scholarly performances. Various factors interfere with the relationship between motivation and educational attainment of the

student, some of these factors are related to the student and mental ability, while the others part correlated with the surrounding environment such as family and educational institutes, or related to social problems or phenomena, for instance, the internet addiction phenomena, which demonstrates critically important of some researches to detect the distraction of students from their study because of the Internet addiction<sup>27,33</sup>. This could also be explained because students spend so much time on online activities, which leaves them with little or no time for studies<sup>33</sup>. It can also be clarified because a student loses the capacity to concentrate, most probably because of the late-night internet sessions<sup>34</sup>. All the prior studies confirm the present results that academic performance is the most serious indicator of Internet addiction.

It can be concluded that a moderate level of internet addiction among medical and paramedical students, without significant differences between genders. And it negatively affects their academic performance.

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