

## Internet Addiction Disorder and Its Determinants among a Sample of Medical Students in Baghdad; 2017

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### ABSTRACT:

#### BACKGROUND:

Internet has become an important part of our daily life, despite a lot of beneficial services available on the internet, excessive use may lead to negative consequences. College students are the most at risk group

#### OBJECTIVE:

This research aimed at estimating the prevalence of internet addiction disorder and trying to find out its determinants among Medical College Students in Baghdad..

#### PATIENTS AND METHODS:

This cross sectional questionnaire survey was conducted on a sample of Al-Kindy Medical College Students in Baghdad using a self-administered questionnaire, information collected from 263 students from April through May 2017.

#### RESULTS:

The study showed that the Prevalence rate of internet addiction disorder among Al-Kindy Medical College Students was 49 %.A statistically significant relation had been found between internet addiction score and hours spent online daily, using social network applications and online games, and daily hours spent online ( $p < 0.05$ ).

#### CONCLUSION:

Internet addiction is common among Al-Kindy Medical College Students. Spending more hours online per day, using social network applications and games were among the determinants of internet addiction disorder.

**KEY WORDS:** internet, addiction, determinants

### INTRODUCTION:

As the internet users have grown rapidly world-wide in the recent years, internet has become an important feature at home, school and the work place <sup>[1]</sup>. Since the mid-1990s, the concept of internet addiction has been the subject of active discussions <sup>[2]</sup>. Internet addiction disorder is still a hard problem to be defined precisely, there are many causes of having a variety of different definitions; one of them is that the reasons of internet addiction are not the same from one place to another. The other reason is that this term may be defined differently by researchers who belong to different fields <sup>[3]</sup>. Christakis defined addiction as

that "components of addiction include preoccupation with the substance or behavior; repeated unsuccessful attempts to reduce it; mood disturbances related to reduction attempts; greater usage than anticipated or desired; jeopardizing employment, relationships or education; or lying about usage". All of these criteria can be seen with internet use <sup>[4]</sup>.

Despite a lot of advantages like useful communications among individuals and social systems, internet use may become problematic and may lead to negative consequences in daily life <sup>[5]</sup>. The college students are considered as the most at-risk population to develop an addiction to the internet <sup>[6]</sup>.

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Among the possible reasons for this susceptibility are: Students have huge unstructured time, students from the ages of 18-22 years are away from parental control with no monitoring about what they say or do online, young students suffer from new problems of adapting to university life and new friends, and sometimes end up seeking a companionship by using different application of the internet, adolescents are experts to use the different technological inventions and especially of the internet applications, students want to escape stress of university resulting from their obligation to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and students feel that university life is separated from social activities<sup>[7]</sup>.

The current research is aiming at measuring the frequency rate of internet addiction disorder among a sample of students in Al-Kindy Medical School in Baghdad and to identify possible determinants of internet addiction disorder among the targeted group.

### **METHODS:**

**Study design:** A cross-sectional questionnaire analytic study.

**Study setting:** This study was conducted in Al-Kindy Medical College, Baghdad, Iraq.

**Study period:** Data were collected during period extending from April through May 2017.

**Target population:** All University undergraduate students in Al-Kindy Medical College of the last 3 years (fourth, fifth and sixth) were included. The participants should be present in the college at time of data collection.

**Sampling technique:** The college students were the target group and any student in the last 3 grades of Al-Kindy Medical College who gave his or her consent to participate in this study was chosen.

**Tools of the study and data collection:** Data were collected using a self-administered and fully structured questionnaire form, which was specially designed by the researcher for the purpose of the current study after obtaining the opinion of a psychiatry expert panel about the content. The questionnaire consisted of two parts: Part 1. Basic data: Including information about age, gender, academic year, marital

status of parents, residence, level of education of parents, number of hours spent online per day, number of years of internet use, and applications or the purpose for which the internet is used.

Part 2: Internet Addiction Test (IAT) is a reliable and valid measure of addictive use of internet, developed by Dr. Kimberly Young in 1998.<sup>[8]</sup> It consists of 20 items that measure mild, moderate and severe levels of internet addiction.<sup>[8]</sup> It uses a 5-point Likert scale, the higher score, the greater level of addiction is.

0 – 30 points: None.

31 – 49 points: mild internet addiction

50 – 79 points: moderate internet addiction

80 – 100 points: severe internet addiction.

Those with mild internet addiction were considered as average internet users while moderate and severe internet addiction were considered as to cause problems in their life due to internet use.<sup>[8]</sup>

**Ethical consideration:** Formal clearance was secured of the Ethical Committee of Al-Kindy Medical School. The study objectives and scope were explained to the students at each grade (from third to fifth). All students were informed that participation in the study was voluntary and given the option not to participate in the study and that all information collected will be treated with high confidentiality and will be used for the research purposes only.

**Statistical Analysis:** Data were translated into a computerized database structure. Descriptive data were presented in appropriate tables and graphs. Statistical analysis was carried out using Statistical Package for Social Sciences (SPSS) version 21.

Associations between 2 categorical variables were explored by cross-tabulation; the statistical significance of such associations was assessed by Chi-square ( $\chi^2$ ) test.  $AP < 0.05$  was considered as significant.

### **RESULTS:**

The questionnaire was handed to 350, only 263 participants responded and the response rate was 75%.

Table (1) showed the frequency distribution of internet addiction disorder according to Kimberly Young's test, approximately half of the participants had internet addiction (49%), most of the study participants who had internet addiction were moderately addicted to the internet 120 (45.6%)

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**Table (1) frequency distribution of internet addiction disorder among study participants according to Kimberly young's test:**

Internet addiction test score	Frequency	%
None	28	10.6
Mild	106	40.3
Moderate	120	45.6
Severe	9	3.4
Total	263	100

Table (2) showed the frequency distribution of (1-7) hours per day. Most of the participants 158 the duration of internet use, three quarters of the (60.1%) were using the internet for about (1-6) years. participants 200 (76%) were using the internet

**Table (2) frequency distribution of duration of internet use among the study participants:**

Duration of internet use	N=263	percentage
Hours spent online per day		
1-7 hours per day	200	76.0
8-15 hours per day	63	24.0
Years of internet use		
1-6 years	158	60.1
7-13 years	105	39.9
Total	263	100

The frequency distribution of internet the participants was the social network 236(89.7%) applications use is illustrated in table (3), while the least application used was E-mails 53 the most frequent application used among (20.2%).

**Table (3) frequency distribution of internet application use among the study group:**

Internet use purpose	Frequency	%
Gaming	80	30.4
Social network	236	89.7
E-mail	53	20.2
Educational purposes	148	56.3

Relation between internet addiction disorder and gender, parents' marital status, academic grade, basic characteristics is shown in the table (4), residence and parents' level of education ( $p > 0.05$ ). No significant association had been found with

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**Table (4) distribution of internet addiction disorder scores by basic characteristics variables:**

Socio-demographic variables		Internet addiction test scores								Chi-square	p-value
		None		Mild		Moderate		Severe			
		N=28	%	N=106	%	N=120	%	N=9	%		
Gender	Male	8	7.5	38	35.5	59	55.1	2	1.9	7.58	0.056
	Female	20	12.8	68	43.6	61	39.1	7	4.5		
Parents marital status	Married	26	11.9	94	42.9	91	41.6	8	3.7	10.25	0.115 *
	Divorced	0	0.0	3	23.1	10	76.9	0	0.0		
	widow	2	6.5	9	29.0	19	61.3	1	3.2		
Residence	Urban	28	11.1	101	39.9	115	45.5	9	3.6	1.75	0.626 *
	Rural	0	0.0	5	50.0	5	50.0	0	0		
Mother level of education	Primary Secondary	5	6.9	32	44.4	33	45.8	2	2.8	1.819	0.611 **
	College	23	12.0	74	38.7	87	45.5	7	3.7		
Father level of education	Primary	0	0.0	1	100.0	0	0.0	0	0.0	3.90	0.691 *
	Secondary	4	10.0	19	47.5	17	42.5	0	0.0		
	College	24	10.8	86	38.7	103	46.4	9	4.1		
Academic grade	Third	6	5.7	40	38.1	55	52.4	4	3.8	9.924	0.128 *
	Fourth	15	17.2	32	36.8	38	43.7	2	2.3		
	Fifth	7	9.9	34	47.9	27	38.0	3	4.2		

\* Results may be statistically invalid

\*\* Primary and secondary level of education merged for statistical validation.

Hours spent online per day was highly association between IAD and years of internet use significantly associated with internet addiction ( $P>0.05$ ), table (5). disorder (IAD) ( $P=0.000$ ), while there was no

**Table (5) distribution of IAT scores by duration of internet use**

Internet use duration		Internet addiction disorder score								Chi-square	p-value
		None		Mild		Moderate		Severe			
		N=28	%	N=106	%	N=120	%	N=9	%		
Hours spent online per day	1-7 hours	28	14.0	99	49.5	69	34.5	4	2.0	53.929	0.000
	8-15 hours	0	0.0	7	11.1	51	81.0	5	7.9		
Years of internet use	1-6 years	20	12.7	63	39.9	69	43.7	6	3.8	2.018	0.569
	7-13 years	8	7.6	43	41.0	51	48.6	3	2.9		

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Relation between IAD and purpose of internet use is shown in table (6), gaming and social network showed significant association with IAD ( $p < 0.05$ ), while E-mail and educational purpose had no significant association with IAD ( $P > 0.05$ ).

**Table (6) distribution of IAD scores by purpose of internet use:**

Internet use purpose		Internet addiction disorder score								Chi-square	p-value
		None		mild		moderate		Severe			
		N=	%	N=	%	N=	%	N=	%		
Gaming	No	24	13.1	79	43.2	76	41.5	4	2.2	9.569	0.02
	Yes	4	5.0	27	33.8	44	55.0	5	6.3		
Social network	No	7	25.9	13	48.1	7		25.9		10.34	0.006
	Yes	21	8.9	93	39.4	122		51.7			
E-mail	No	26	12.4	87	41.4	92	43.8	5	2.4	7.327	0.06
	Yes	2	3.8	19	35.8	28	52.8	4	7.5		
Educational purpose	No	7	6.1	46	40	58	50.4	4	3.5	5.032	0.169
	Yes	21	14.2	60	40.5	62	41.9	5	3.4		

### DISCUSSION:

This study showed that prevalence of internet addiction is (49.9%), a finding which is compatible with other studies conducted in U.S. and Jordan where the prevalence rate was (48.1%) and (40%) respectively<sup>[9,10]</sup>, and higher than other studies conducted in Iraq, Lebanon and Malaysia where the prevalence rate was 0.7%, 16.8%, 36.9%. respectively<sup>[11,12,13]</sup>, the high prevalence of this study may be due to the widespread use of internet which may lead to increase in the internet addiction prevalence.<sup>[14,15]</sup> Some studies have suggested gender as a predictive factor of internet addiction. A study conducted among El-Minia high school students in Egypt in 2012 concluded that males are more addicted to the internet than females.<sup>[16]</sup> It seems that male students are more likely to become Internet addicted as they are more experienced in using the internet, receive less parental supervision and use the Internet for entertainment purposes more than female ones<sup>[17]</sup>. However, other studies found no gender differences in relation to internet addiction like a study conducted among medical students of University Sultan ZainalAbidin, Malaysia in 2015.<sup>[18]</sup> This study supports the literature that there is no gender difference with internet addiction and the explanation for this may be that the existence of a gender difference among younger people with

internet addiction remains equivocal.<sup>[19]</sup> In the current study the relation between parental level of education and internet addiction was statistically not significant. This result is consistent with a study by Salih A. conducted among Diyala Medical Students in 2013 in Iraq which showed that internet addiction was associated with gender, family residence and wasn't associated with parents education, current residence and marital status<sup>[11]</sup>. Hui Wang et al in China in 2010 in their study suggested that as long as parents continue to exercise loving care and show their understanding and support, their educational level will probably have no influence on the likelihood of developing internet addiction among their siblings<sup>[20]</sup>. While the parents' educational level was found to have association with internet addiction in a nationwide study among Iranian adolescents in 2013<sup>[21]</sup>.

No significant association was found between internet addiction and residence in this study which is congruent with a study by Ching SM et al in 2013 about Prevalence and factors associated with internet addiction among medical students in Malaysia who found that one in every three student was prone to have internet addiction and the significant predictors of addiction was male gender and duration of online hours per day while the residence show no significant

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difference between urban and rural areas<sup>[13]</sup>, in contrary Salih A. in 2013 found that students from urban localities had higher levels of addiction than those from rural localities<sup>[11]</sup>. This may be due to urban noise, complexity of life and weak community support. These factors might increase mental stress which has been shown in many studies to have a significant positive association with internet addiction.<sup>[22]</sup>

In this study, no significant association was found between internet addiction and academic year of study. Similarly a cross-sectional study done by Younes F et al in 2015 conducted at Saint-Joseph University in Lebanon, had found no significant difference in internet addiction between different academic years of study.<sup>[12]</sup>

The duration of internet use per day showed significant association with internet addiction, a finding which is congruent with a study done by Chou C et al in 2000; which showed that internet addicts spent almost triple the number of hours connected to the Internet as compared to non-addicts<sup>[23]</sup>. The reason behind this may be that addict group found the Internet entertaining, interesting, interactive, and satisfactory<sup>[23]</sup> so they spent more time online per day. While a study done by Goel D et al in 2009 revealed no significant relationship between internet addiction and the hours of use per day.<sup>[24]</sup>

In contrary, regarding years of internet use and its association with internet addiction, the current study showed no significant association between them which is compatible with a study done by Kutty NA in 2012 in Malaysia which was a cross-sectional online survey which reported no significant statistical association between years of internet use and internet addiction.<sup>[1]</sup>

Regarding the purpose of internet use, the current study showed that 89.7% of the participants use the social network applications more frequently than other purposes, a finding which is compatible with Kutty NA study in 2012 which found that 85.5% of the participants use the social network mostly and reported that social network sites usage was the "preferred" method of communication among adolescents in Malaysia<sup>[1]</sup>. This study revealed a significant association between social network use and internet addiction, a finding that is supported by a study carried out in 3 different colleges in the city of Mumbai in 2009 which revealed that the purpose of using

the internet was significantly different for addicts.<sup>[24]</sup>

Accessing the internet for the purposes of game playing was the most significant predictor for excessive internet use found in a study conducted among a sample of Greek adolescents by Tsitsika A et al in 2009.<sup>[25]</sup> The current study support this finding by reporting a significant association between playing games and internet addiction.

This study showed no significant association between internet addiction and use of internet for educational purpose, which is congruent with the study carried out among Malaysian medical students in 2013 which reported that students who used the internet for entertainment were 3.5 times more likely to have internet addiction in comparison to educational purposes.<sup>[13]</sup>

The result of the current study showed no significant association between use of E-mail and internet addiction, supporting the study done by Salehi M et al conducted among medical students from Mashhad, Iran in 2013, who found no significant association with E-mail use and use of internet for scientific search with internet addiction<sup>[14]</sup>.

### CONCLUSION AND RECOMMENDATIONS:

Internet addiction disorder appear to be common among Al-Kindy Medical College students. Using the internet for long hours per day especially on social network applications and games were the more likely predictors.

University authority need to be aware of the prevalence and the problems associated with internet overuse and try to educate the students to use internet in an appropriate and meaningful way and to encourage students to invest their leisure time in other hobbies like sports and arts.

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