

Correlation of internet addiction with anxiety, depression and personality traits –Upper Egypt study

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Abstract

Objective:The aim of the study was to investigate the relationship of Anxiety, Depression and personality traits with Internet addiction (IA) in university students.

Methods:A cross-sectional survey was conducted on a random sample of 588 students selected from four faculties in Sohag University. IA was assessed by the 20-item Young Internet Addiction Test (YIAT). Information was also collected on socio-demographics, university-related factors and Internet usage patterns. Eysenck personality questionnaire (EPQ) used for Assessment of the personality traits. Taylor's Manifest Anxiety Scale was used as a general indicator of anxiety. Beck depression inventory was used for measuring the existence and the severity of depression.

Results:Findings showed that the prevalence of problematic internet use (PIU) among the studied population was 35.2%. About 86.9% of Students with PIU significantly had anxiety also, 85.02% of Students with PIU significantly had Depression . PIU significantly had high score in Psychoticism and Neuroticism and low score in Lie and Extraversion.

Conclusion:PIU prevalent disorder among undergraduate university students in Sohag. Clinicians and health professionals should be aware of the risk of PIU in students with Anxiety , Depression and abnormal personality traits.

Keywords: Internet Addiction, prevalence, Depression, Anxiety and personality

INTRODUCTION

There is no doubt that the internet has many uses including access to knowledge, research, communication, entertainment, shopping, social platforms, and so on.^[1] However, it still may cause physical and psychological harms.^[2] Internet addiction can be defined as a maladaptive pattern of internet use leading to clinically significant impairment or distress.^[3] The prevalence of internet addiction range from 0.3% to 38% in many studies , and this discrepancy might be due methodological variation in diagnosis and diversity in use of diagnostic instruments.^[4] Previous studies about Internet addiction have investigated

several associated psychological variables such as anxiety, depression, and interpersonal relations.^[5] Many studies on Internet addiction focus on internal and individual factors that may predispose individuals to problematic Internet use.^[6] Individuals with higher negative emotions and inward thinking are more susceptible to overuse of the Internet.^[7] Most of problems associated with Internet addiction, such as antisocial tendencies, social anxiety, and aggression, may returned back to maladaptive personality disorders described in the psychoticism, extraversion, and neuroticism (P-E-N) model.^[8]

Rationale of work:

Internet addiction among university students may be associated with many psychiatric problems including depression and social anxiety and personality disorder. These psychiatric problems are not well revealed, at least in the Egyptian university students. So, we want to research for these specific psychiatric problems in university students who use the internet.

Aim of the work:

To explore the relationship between internet addiction and anxiety, depression, personality traits among sample of Egyptian university students.

METHOD:

Study design: A cross-sectional survey was conducted from February 2017 to January 2018.

Site of study: Four Faculties in Sohag University (Faculty of Veterinary Medicine, Faculty of Science, Faculty of Commerce and Faculty of Arts) were chosen to be involved in the current study.

Study participants and sampling:

The sample size was calculated to be 600 students as calculated using Open EPI program. By Using a multistage clustering sampling method, we selected the students for our study as follows: The first stage: Two practical faculties (faculty of Veterinary Medicine and faculty of Science) and Two theoretical faculties (faculty of Arts and faculty of Commerce) were chosen from Sohage university following simple random sampling technique. The second stage: The sample size divided on both practical and theoretical faculties with 400 students from theoretical faculties and 200 students from practical faculties according to stratified cluster random sampling technique. 12 students were excluded on the

basis of incomplete questionnaires and the study included 588 students.

Study instrument

All students were subjected to the following procedures:

1-Self-administered questionnaire for Assessment of; Socio-demographic, academic data of the student and Patterns of internet use.

2-Assessment of the degree of internet addiction: By using Young internet addiction test.^[1] We used the Arabic version translated by Hawi.^[9] The IAT includes 20 items, each of which is rated on a six-point Likert scale. It has a score range from 0 to 100. In the present study The following cut-off points were applied to the total YIAT score: Normal Internet use or non problematic Internet use : scores 0–49 and Potential problematic Internet use (PIUs): scores equal to or over 50.

3-Taylor's Manifest Anxiety Scale (TMAS)^[10]: As a general indicator of anxiety as a personality trait. We used the Arabic version translated by Fahmi et al.^[11] It consisted of 50 true or false questions. It has Score range from 0 to 50: no anxiety (0 -16), mild anxiety (17 - 24), moderate anxiety (25 -35) and sever anxiety (36 – 50).

4-Beck depression inventory^[12]: For measuring the existence and the severity of depression. We used the Arabic version translated by Abdel-Khalek.^[13] It is 21-question multiple-choice self-report inventory. It has Score range from 0 to 63: normal (0 – 13), mild depression (14 – 19), moderate depression (20 – 28) and sever depression (29 – 63).

4-Eysenck personality questionnaire (EPQ)^[14]: To assess the personality traits of a person. It assess the following personality traits Extraversion (E) and Neuroticism (N), Psychoticism (P) and Lie (L). It Contains 91 statements. We used the Arabic version translated by Abdel-Khalek^[15].

Ethical consideration:

Ethical approval was obtained from Scientific Research Ethical Committee of the faculty of medicine, Sohag University. Additionally, official approval from Deans of the four studied Faculties was secured. An informed consent was obtained from each participant prior to filling the questionnaires.

The statistical analysis:

The data were coded, tabulated and analyzed using [SPSS] version 20 .

Qualitative data were expressed as numbers and percentages, and the Chi-square test were applied to test the relationship between variables. Quantitative data were expressed as mean and standard deviation (Mean \pm SD) and t- test were used to compare means for groups. The associations between PIU and the studied variables were examined at both univariate and multivariable levels using logistic regression .A p-value of < 0.05 were considered as statistically significant.

RESULTS

The current study included 588 students, 196 student from two practical faculties (faculty of Veterinary Medicine and faculty of Science) and 392 students from Two theoretical faculties (faculty of Arts and faculty of commerce). The mean age of students of practical faculties was 20.19 ± 1.58 , and for students of theoretical faculties was 20.17 ± 1.47 with equal number of females and male students (**Table 1**). Nearly one third of the students were PIU and two thirds were normal internet users. Students of theoretical faculties significantly had Potentially problematic internet use (PIU) than Students of practical faculties (**Table 2**). PIU significantly more in younger age than normal internet user. Male students significantly were PIU than females students. (**Table 3**). PIU significantly more in theoretical faculties, significantly more in 1st grade also, tended to be high among students of low academic performance . Students with PIU significantly had computer and internet at home and used internet in chatting and games (**Table 4**). 86.96% of Students with PIU significantly had anxiety (**Figure 1**). 85.02% of Students with PIU significantly had depression (**Figure 2**). Students with PIU significantly had high score in Psychoticism and Neuroticism and low score in Lie and Extraversion performance (**Table 5**). Final logistic regression analysis identified that Depression, Availability of internet and computer at home, Anxiety, high score of Psychoticism, using Internet for chatting , high monthly income , 1st grade , low score of Lie, young age low academic performance , Theoretical faculties and Male gender are strong predictors of PIU. (**Table 6**).

Socio-demographic data	Practical		Theoretical		P value
	N=196	Percentage%	N=392	Percentage%	
Age/years Mean ± SD	20.19±1.58		20.17±1.47		0.91
Gender					
Females	98	50.00%	196	50.00%	1.00
Males	98	50.00%	196	50.00%	
Residence					
Rural	70	35.71%	189	48.21%	0.004**
Urban	126	64.29%	203	51.79%	
Residence with					
Alone	42	21.43%	126	32.14%	0.007**
With parents	154	78.57%	266	67.86%	
Father job					
Farmer	19	9.69%	52	13.27%	0.004**
Official employed	112	57.14%	162	41.33%	
Self employed	37	18.88%	105	26.79%	
Retired	28	14.29%	73	18.62%	
Father education					
Illiterate	12	6.12%	50	12.76%	0.046*
Primary	19	6.69%	29	7.40%	
Preparatory	20	10.20%	30	7.65%	
Secondary	46	23.47%	111	28.32%	
University	99	50.51%	172	43.88%	
Mother education					
Illiterate	29	14.80%	69	17.60%	0.021*
Primary	16	8.16%	44	11.22%	
Preparatory	17	8.67%	49	12.50%	
Secondary	60	30.61%	96	24.49%	
University	74	37.76%	134	34.18%	
Monthly income					
Less than 2000	58	29.59%	113	28.83%	0.34
2000-5000	97	49.49%	176	44.90%	
More than 5000	41	20.92%	103	26.28%	

Table(1): Socio-demographic data among students of practical and theoretical faculties

internet addiction test	Practical		Theoretical		Total		X ² value	P value
	N=196	Percentage%	N=392	Percentage%	N	Percentage%		
Internet addiction								
Non problematic (Normal)	143	72.96%	238	60.71%	381	64.80%	8.59	0.003**
Potentially problematic	53	27.04%	154	39.29%	207	35.20%		

Table(2): Distribution of internet addiction among students of practical and theoretical faculties.

Socio-demographic data	non-problematic use		potentially problematic use		X ² value	P value
	N=381	Percentage%	N=207	Percentage%		
Age/years Mean ± SD	20.36± 1.50		19.85± 1.45		t=4.02	0.0001 **
Gender Females Males	223 158	58.53% 41.47%	71 136	34.30% 65.70%	31.49	<0.0001 **
Residence Rural Urban	163 218	42.78% 57.22%	96 111	46.38% 53.62%	0.70	0.43
Residence with Alone With parents	96 285	25.20% 74.80%	72 135	34.78% 65.22%	6.04	0.01*
Father job Farmer Official employed Self employed Retired	59 149 106 67	15.49% 39.11% 27.82% 17.59%	12 125 36 34	5.80% 60.39% 17.39% 16.43%	29.61	0.0001 **
Father education Illiterate Primary Preparatory Secondary University	54 37 36 100 154	14.17% 9.71% 9.45% 26.25% 40.42%	8 11 14 57 117	3.86% 5.31% 6.76% 27.54% 56.52%	25.46	<0.0001 **
Mother education Illiterate Primary Preparatory Secondary University	83 42 49 91 116	21.78% 11.02% 12.86% 23.88% 30.45%	15 18 17 65 92	7.25% 8.70% 8.21% 31.40% 44.44%	30.59	<0.0001 **
Monthly income Less than 2000 2000-5000 More than 5000	135 188 58	35.43% 49.34% 15.22%	36 85 86	17.39% 41.06% 41.55%	54.94	<0.0001 **

Table (3): Comparison between non-problematic and potentially problematic internet user according to Socio-demographic data.

Academic data	non-problematic use		potentially problematic use		X ² value	P value
	N=381	Percentage %	N=207	Percentage %		
Faculty						
Practical	143	37.53%	53	25.60%	8.59	0.003**
Theoretical	238	62.47%	154	74.40%		
Grade of faculty						
1 st grade	167	43.83%	126	60.87%	15.57	<0.0001**
4 th grade	214	56.17%	81	39.13%		
Academic performance						
Average	161	42.26%	71	34.30%	31.46	<0.0001**
Good	58	15.22%	73	35.27%		
Excellent	162	42.52%	63	30.43%		
Presence of computer at home						
Not present	147	38.58%	42	20.29%	20.58	<0.0001**
Present	234	61.42%	165	79.71%		
Availability of internet at home						
Not present	156	40.94%	32	15.46%	40.06	<0.0001**
Present	225	59.06%	175	84.54%		
Main aim of internet use						
Chatting	74	19.42%	87	42.03%	67.77	<0.0001**
Games	61	16.01%	59	28.50%		
Gather information	144	37.80%	31	14.98%		
News	202	26.77%	30	14.49%		

Table (4): Comparison between non-problematic and potentially problematic internet user regarding to Academic data and patterns of internet use

Eysenck personality questionnaire (EPQ)	Non-problematic use	Potentially problematic use	Z value	P value
	N=381	N=207		
Psychoticism Mean ± SD	5.97±3.57	13.18±6.40	-12.75	<0.0001**
Extraversion Mean ± SD	12.39±3.98	8.27±4.66	0.90	<0.0001**
Neuroticism Mean ± SD	11.08±5.63	16.53±3.67	-11.12	<0.0001**
Lie Mean ± SD	15.33±3.98	9.13±4.65	13.69	<0.0001**

Table(5):Comparison between non-problematic and potentially problematic internet user regarding to the personality traits

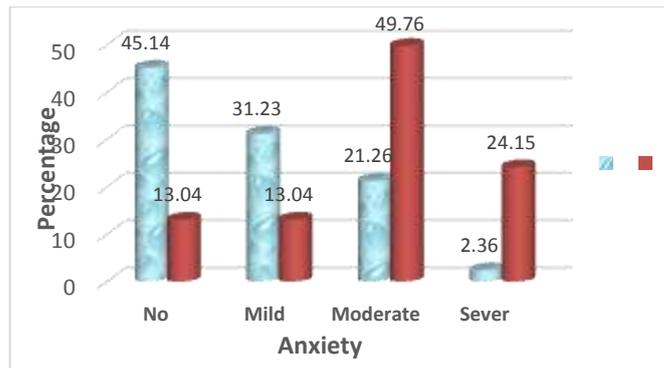


Figure (1): Comparison between non-problematic and potentially problematic internet user regarding to anxiety.

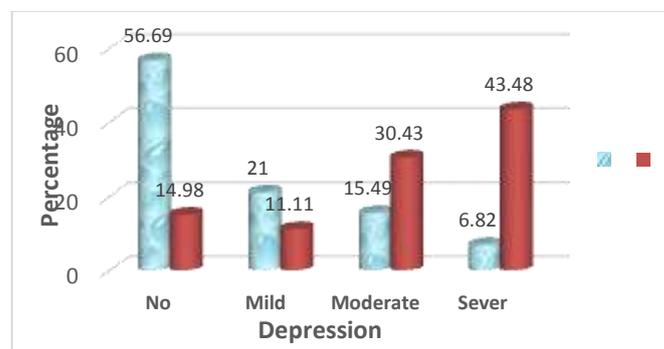


Figure (2): Comparison between non-problematic and potentially problematic internet user according to depression.

Variable	Odds ratio (95% confidence interval)	P value
Sever vs. no Depression	6.43 (2.40-17.25)	<0.0001**
Availability of internet at home	5.25 (2.55-10.81)	<0.0001**
Moderate vs. no Anxiety	4.85 (2.00-11.75)	<0.0001**
Moderate vs. no Depression	4.49 (1.93-10.44)	<0.0001**
Presence of computer at home	2.21 (1.43-3.42)	<0.0001**
Psychoticism	1.21 (1.11-1.32)	<0.0001**
Gather information vs. Chatting	0.23 (0.11-0.47)	<0.0001**
Monthly income More than 5000 vs. Less than 2000	3.82 (2.22-6.58)	<0.001**
4 th grade vs. 1 st grade	0.44 (0.30-0.66)	<0.001**
Lie	0.87 (0.79-0.94)	0.001**
Age/years	0.73 (0.59-0.88)	0.002**
Sever vs. noAnxiety	8.01 (2.06-31.10)	0.003**
Academic performance Excellent vs. good	0.50 (0.30-0.83)	0.007**
Theoretical vs. Practical	2.17 (1.18-4.01)	0.01*
Academic performance Average vs. good	0.53 (0.32-0.87)	0.01*
Aim of internet use News vs. Chatting	0.39 (0.18-0.82)	0.01*
Males Vs. females	2.18 (1.14-4.18)	0.02*
Monthly income 2000-5000 vs. Less than 2000	1.65 (1.03-2.65)	0.04*

Table (6): Final logistic regression model of factor affecting presence of potential problematic internet use.

DISCUSSION

Our study was conducted to assess the prevalence of PIU among undergraduate university students and to determine the personal and social characteristics of PIU among adolescents. We found that prevalence rate of PIU among students was 35.20%. Our findings were consistent with the results of studies conducted

in Greek 34.7%^[16] and in Korea 38%^[17]. Another study done in Sohag university, revealed that 47.7% of the surveyed medical students suffered from IA.^[18] Also the results of our study were slightly lower than from the results of^[19] and^[20] in India, they reported that 46.8% and 44.6% of the respondent had Internet addiction respectively.

In the present study, we found that Students of theoretical faculties significantly had PIU (39.29%) than Students of practical faculties (27.04%). These findings are consistent with the results of many studies done in Egypt and found that the Literary colleges, were more likely to suffer more from PIU than scientific colleges.^[21,22,23] This marked difference could be explained by the academic overload and the high pressure of study demands in students of practical faculties.^[24]

Regarding age, the PIU significantly more in younger age than normal internet user. Most of the previous researchers had concluded that younger people are at higher risk for internet addiction disorder.^[6,25,26] This was not in agreement with Lee and Stapinski^[27] who could not report a significant association between age and internet addiction.

PIU was significantly more in males than in females and this was in line with those of most of the previous studies, found that male gender is a predictor of IA.^[6,28,29] Similar findings were reported by studies conducted among students in Iran^[30], China^[31] and Japan^[32]. Studies have shown that the link between male gender and internet addiction may be mediated by the online activities that they were engaged upon.^[33] Activities such as online gaming which are highly addictive were mainly reported among males, whereas females were more involved in social networking.^[34]

Regarding father job, Fathers of PIU users significantly employed. Also, PIU significantly higher in students with high monthly income. Internet addiction was higher among students whose mothers and fathers were employed and among those with a high family income level.^[23,35,36]

Our study showed that incidence of PIU tended to be higher among

students of low academic performance. The results of the present study were in agreement with^[23,37] who found significant negative correlation was present between IAT scores and academic grades of the students. Students with PIU, significantly had computer and internet at home than Students of normal internet use. The same findings are reported with the results of many studies done in Egypt.^[37,38] Regarding main aim if internet use PIU, significantly used internet in chatting and games. In many studies, it was found that addicted people spend more time on websites with gaming, and chatting content.^[39,40,41] Online activities and practices have also, been found to be important factors in detecting internet addiction.^[42] The results of our study also similar to the findings of^[29,43] who revealed that undergraduate problematic Internet users were more likely to use real-time interactive activities such as chat and online games.

We found that 86.9% of Students with PIU significantly had anxiety. Previous reports demonstrated that anxiety, ADHD, and depression are the 3 psychological disorders that are prevalent in individuals with internet addiction.^[44] Also, other researchers have found that shyness and social anxiety are significant predictors of internet addiction.^[45,46,47] Regarding depression 85.02% of Students with PIU significantly had Depression. Previous studies showed a significant association between internet addiction (IA) and depression among adolescents.^[24,46] Also, another study reported a significant association between the various level of internet addiction and negative emotions, such as depression, loneliness, and obsessive behavior.^[17,48]

The study showed that Students with PIU significantly had high score in Psychoticism and Neuroticism and low score in Lie and Extraversion performance. This was in agreement with Ge et al.^[49] who revealed that there was a positive correlation between the total scores of internet-addiction and psychoticism. Also, our results were in line with Dong et al.^[50] who found that internet addicts showed significantly higher N score and lower Lie scores than those in the control group. Zamani et al.^[51] found negative and significant relationship observed between Internet addiction and extroversion.

LIMITATIONS:

One of the limitations of this study is that data collection was based on self-reported questionnaires so prone to recall bias. Another limitation is being a cross-sectional study which showed the relation between PIU and some potential risk factors without being able to conclude a cause-effect relationship.

CONCLUSION AND RECOMMENDATIONS:

This is one of the studies that assess the prevalence of PIU among undergraduate university students in Egypt. Nearly one third of the students were PIU and PIU significantly more in theoretical faculties than in practical faculties. The study revealed that young age, male gender, 1st grade, low academic performance, high and moderate monthly income, presence of computer at home, Availability of internet at home, using Internet for chatting and gaming, Anxiety, depression and high score in Psychoticism and low score in Lie are strong predictors of PIU. We recommend Counseling to help the university students to learn social skills and healthier ways of coping with uncomfortable emotions, such as stress, anxiety, or depression.

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