

ORIGINAL RESEARCH

Effect of excessive internet use in Saudi and Egyptian teenagers' health: Comparative study

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Received: February 27, 2018

Accepted: March 28, 2018

Online Published: April 18, 2018

DOI: 10.5430/jnep.v8n9p25

URL: <https://doi.org/10.5430/jnep.v8n9p25>

ABSTRACT

Using of the internet today is a growing part of any society. Teenagers are the most users of the internet at their home and/or school. Therefore, it changes their daily lives in terms of physical, social, and psychological status that may exaggerated to be an internet addiction disorder or a physical problem. The aim of the study was to recognize the effects of excessive internet use in Saudi and Egyptian teenagers' health. The design used to conduct the present study was a descriptive correlation design, a convenient sample of 668 teenagers who were recruited from intermediate and secondary school from both countries, 331 teenagers from King Saudi Arabia (KSA) and 337 from Arab Republic of Egypt (ARE). Three tools were used for data collection: the first one was a questionnaire including demographic background of the participants and their families. The second was Internet Addiction Test (IAT) Young (1998) and the third pain rating scale to assess the intensity of musculoskeletal pain that encountered by the students. Results show that 86.6% of KSA teenagers used the internet daily compared to 69.6% in ARE. Regarding internet addiction, in teenagers, 0.9% were severe, 45.3% moderate and 47.7% mild compared to 0.3%, 46.3% and 44.2% in ARE one, 67.3% of KSA teenagers have musculoskeletal pain with internet usage compared to 74.3% in ARE teenagers. No significant relation was found between both groups in relation to internet addiction. A significant relations were found in Saudi students' socio-demographic data and their level of internet addiction in the area of academic level ($p \leq .001$), and level of academic achievement ($p = .037$). No significant relation was found in the same area for Egyptian students. The researchers suggest further studies to be conducted in this field on larger sample size for both genders to identify the other factors related to excessive internet use.

Key Words: Excessive internet use, Internet addiction, Internet addiction disorders, Internet addiction test

1. INTRODUCTION

Adolescent usually, are between the ages of 11 and 18 years, they represent 20% of total population in King Saudi Arabia (KSA),^[1] while in Arab Republic of Egypt (ARE) was 19.1% they find one's own identity and view of life and searching about their peers' acceptance. They develop a conflict with cultural, moral norms of society and authority; those conflicts can trigger a series of defense mechanisms to be receptive

during this period and can become drawn to the Internet as a form of release.^[2]

Nowadays, the internet is becoming an integral part of the daily life of the teenagers who are the most users of internet at home or school on a large scale and they are the first to begin experiencing problems associated with spending ever-increasing periods on the internet increases the risk of developing misuse, that referred in research literatures as

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overuse of internet, problematical internet use and the maladaptive use of internet which is a recent and fast growing clinical phenomenon that may enhance psychiatric and psychosomatic symptoms of those age group.^[3] The other risk factor was widespread internet access that facilitates their using of favorite applications whenever and wherever they want, which increase the negative consequences neither in psychiatric as internet addiction or psychosomatic as musculoskeletal discomfort, such as back, neck, shoulder, and limb pain.^[4,5]

The first studies conducted in this field were in the 90's, with the emergence of a new concept of internet addiction or cyberaddiction. Internet Addiction (IA) defined as the difficulty controlling ones impulses and the inability to disconnect from internet.^[6] Many studies asserted that the users of the internet should be aware of its positive and negative effects on their physical and psycho-social status, in spite of the various advantages of this technology as positive influences of the internet use of teenagers' cognitive abilities, creativity, improve their socialization, communication, problem solving, critical thinking skills in addition to improve language development, verbal and nonverbal skills, self-concept and used as a means to cope with stress.^[7-11]

The Center of Health Protection of the Department of Health (CHPDH) summarized the negative effects of excessive use of internet and electronic devices on teenagers' health and development from the physical aspect as obesity, decreasing physical fitness, vision problems, musculoskeletal problems, sleep deprivation, injury and accidents or in psychosocial aspect as poor academic performance, worsening family relations, increasing sense of loneliness, depression, lowering self-esteem and other mental health problems.^[12]

Many researchers reported that the excessive use of the internet was associated with many social, psychological and physiological disorders. Regarding the excessive use of internet and teenagers' social health defect, some of the internet users spend longer periods of time connected and experience alienation, loneliness and depressive symptoms when offline. Besides, the preoccupied individuals with electronic games, search and recreational activities may be liable to neglect sporting and aerobic exercise, and familial communication as well as societal accomplishments.^[13,14] The Excessive use of social media and internet effects on children and adolescent's mental health status, brain development, physical and social development.^[15]

In a study conducted in Jordan, a positive relation between anxiety, depression and occurrence of IA. The prevalence of Internet addiction was almost twice as high in boys (7%) than girls (4.2%). Also, the study indicated that Internet addiction

had a significant relationship with poor sleep and depression.^[16,17] A study conducted in KSA found that 38.4% and 2.1% of the participants were categorized as moderate to severe internet addiction respectively, while 64.6% of them suffering from depression compared by 35.4% without depressive symptoms.^[18] In Egypt many studies found that 17% of teenagers used Facebook and 46% of them agreed that Facebook is an important part of their social life. A significant relation was found between IA score and social phobia and generalized anxiety in adolescent. Instead of a strong social bond from the use of the internet it may have catalyze undesired effects in cultural norms by shifting away from responsibilities and healthy social dynamism.^[19,20]

Many researchers found that excessive use of the internet may affect physical health of the users and increase risk of somatic health problems, being associated with insufficient sleep among female adolescents and excessive weight among male adolescents, increased head flexion and neck flexion, increased lumbar lordosis, also headache and musculoskeletal pain.^[21-23] In Oman, many teenagers download internet content without awareness of its legality. This may effect on their lives and behavior in a negative way and had using mobile phones which exposes them to fatigue, headache, decreased concentration and local irritation and burning in their hands.^[24] As to an outright conviction about the Internet being a bane or boon to society at large, the topic remains highly controversial. Therefore, this study is of paramount importance because the study results will shed light on the effect of excessive internet use on teenagers' health in KSA and ARE.

2. MATERIALS AND METHODS

2.1 Materials

2.1.1 Design

A descriptive correlation design was used.

2.1.2 Setting

The study was conducted in 4 intermediate and secondary schools at 4 urban cities Jeddah and El-Dammam Cities in Saudi Arabia and El Zagazig and EL-Mansoura Cities in Egypt.

2.1.3 Sample

A convenient sample of 668 teenagers from both countries 331 from Saudi settings and 337 from Egypt represented the previous mentioned schools.

2.1.4 Tools

Three tools were used, the first tool consists of two parts in the forms of a questionnaire sheet that developed by the researchers based on the literatures reviewed. First part focus to assess socio demographic data of teenagers as age, gender,

academic achievement and study level in addition to their families as fathers, mothers education level and monthly family income. Second part data related to internet uses, such as time, purpose and duration encountered by the students.^[25] Second tool was the Internet Addiction Test of Young (IAT) to assess the signs of internet addiction and its level that rating by five Likert scale (Never = 1, rarely = 2, Sometimes = 3, Often = 4 and Always = 5).^[26,27] Third tool is the pain rating scale that scored from 0-10 to assess the intensity of musculoskeletal pain.

2.2 Methods

The validity of the tools was ascertained by a jury of five experts in the nursing field (This was only for the first tool). The second tool was valid, according to Hawi (2013)^[27] who conducted a study regarding Arabic validation of the Internet Addiction Test (IAT).

A pilot study was carried out on 5 students from each school (a total of 20 students) to evaluate the tools applicability, clarity and to estimate the length of the time needed to fill the sheet.

Numeric pain rating: Explanation for the using of the numeric pain rating scale that matched to pain intensity if the number is zero on the scale it means “no pain”, 10 means “worst possible pain”, from 2 to 3 was mild, while moderate (4-6) and higher than 7 means severe pain.

Internet addiction scoring: A twenty questions related to internet addiction scored by a five Likert scale. The total grades of those questions were 100 points and categorized as: normal range (0-30 points), mild (31-49 points), moderate (50-79 points) and severe internet addiction from (80-100 points).

2.3 Data collection

An explanation of the study aim and how to complete all parts of the questionnaire was introduced to the students. Then the questionnaire was distributed to students during school activity hours, an informed consent was obtained from them, the questionnaires were collected at the end of school duty day. After collection of the questionnaire from the students, checking had been done to ensure that all parts were completed, and then it was coded.

Data were organized, revised, stored, tabulated and analyzed, using descriptive and inferential statistics with Statistical Package for Social Sciences (SPSS), version 21.0. A significant *p* value of less than .05 was considered, for Chi-square test.

2.4 Ethical considerations

An approval of ethical considerations was obtained from the Institution Review Board (IRB) of Doctor Soliman Fakeeh Hospital. An informed consent was obtained from students after the aim of the study was explained to them and they were informed that their participation is voluntarily. They were assured that the personal information kept confidential as the personal information weren't being linked directly with the results. Also to maintain the confidentiality of gathered data, it was collected anonymously and a code was assigned to each questionnaire sheet.

3. RESULTS

Table 1 reveals that the majority of the Saudi students 82.8% were males, while in Egypt 59.1% were females and their age median ranged between 16 and 15 years. Above two thirds of both Saudi and Egyptian students were living with their parents (84.9%, 93.2% respectively). Regarding their academic level, 25.4% of Saudi students were in second intermediate school compared to 22.6% in Egypt. Concerning the level of students' academic achievement 45.4% of Saudi students were excellent compared to 27.3% in Egypt.

Table 1. Teenagers' socio-demographic data

Variables	Saudi Arabia (n = 331)	Egypt (n = 337)
	n (%)	n (%)
Age in yrs.		
Median (IQR)	16.0 (2)	15.0 (4)
Gender		
Male	274 (82.8)	138 (40.9)
Female	57 (17.2)	199 (59.1)
Arrangement the child among his brothers		
1 st	74 (22.5)	119 (36.4)
2 nd	55 (16.7)	88 (26.9)
3 rd	81 (24.6)	45 (13.8)
4 th	31 (9.4)	32 (9.8)
5 th	34 (10.3)	18 (5.3)
The last one	50 (15.2)	28 (8.6)
The lonely	6 (18.1)	7 (2.1)
Social status		
Live with parents	281 (84.9)	313 (93.2)
Live with mother	25 (7.6)	15 (4.5)
Live with father	17 (5.1)	6 (1.7)
Others	8 (2.4)	3 (0.9)
Academic level		
1 st intermediate	12 (3.6)	31 (9.2)
2 nd intermediate	84 (25.4)	76 (22.6)
3 rd intermediate	51 (15.4)	73 (21.7)
1 st secondary	69 (20.8)	16 (4.7)
2 nd secondary	77 (23.3)	9 (2.7)
3 rd secondary	38 (11.5)	132 (39.2)
Level of academic achievement		
Excellent	150 (45.4)	92 (27.3)
Very good	131 (39.6)	161 (47.7)
Good	25 (7.6)	52 (15.4)
Average	25 (7.6)	32 (9.5)

Table 2 shows both fathers of Saudi and Egyptian students were nearly equal in their higher education level. The post-graduates were higher in Saudi fathers and mothers than in Egyptian one (22.5%, 11.3% and 3.6% respectively). Regarding the fathers work, the majority of Saudi and Egyptian fathers were working (92.0% and 82.2%). No work was registered in Saudi and Egyptian mothers (73.1%, 69.3% respectively).

Table 2. Teenagers’ family socio-demographic data

Variables	Saudi Arabia (n = 331)	Egypt (n = 337)
	n (%)	n (%)
Father’s education level		
Illiterate	9 (2.8)	7 (2.1)
Primary	29 (8.9)	12 (3.6)
Intermediate	37 (11.4)	59 (17.5)
Secondary	82 (25.2)	152 (45.1)
Higher education	95 (29.2)	95 (28.2)
Postgraduate	73 (22.5)	12 (3.6)
Mother’s education level		
Illiterate	42 (12.7)	31 (9.2)
Primary	46 (14.0)	28 (8.3)
Intermediate	40 (12.2)	56 (16.6)
Secondary	76 (23.2)	149 (44.2)
Graduates	90 (27.4)	61 (18.1)
Postgraduate	37 (11.3)	12 (3.6)
Does the father work?		
Yes	267 (82.2)	310 (92.0)
No	64 (19.3)	27 (8.0)
Does the mother work?		
Yes	89 (26.9)	104 (30.9)
No	242 (73.1)	233 (69.3)

Table 3 reveals that more than two thirds of Saudi and Egyptian students (86.6%, 69.6%) use internet daily and 43.2% from Saudi staying online for more than 3 hours daily compared to 17.2% of Egyptian teenagers. Regarding the place of internet uses, above half of Saudi students (60.1%) compared to 26.1% in Egyptian one used their bedroom, while 63.7% and 58.7% in both countries had no certain place. Regarding the purpose of the internet, in both groups above half of them used internet for social communication (60.7%, 66.5%), while 56.1% was in Egyptian compared to 37.7% in Saudi students, were used for assistance in academic achievement & studying.

Table 4 shows that musculoskeletal pain with internet uses, it appears that one third of both groups complained of moderate pain (33.2% and 34.1%) respectively and the commonest sites of pain were hands and neck in both Saudi and Egyptian students (22.1%, 20.5% and 19.9%, 18.7%) respectively and equal in head pain (5.0%). The lowest other sites of pain were eye (0.9% and 1.8%) respectively. Regarding the character of pain, the Saudi students’ pain that grading from hotness then numbness was 38.1% and 16.3%, while Egyptian students were throbbing followed by sharp 22.6% and 18.7% respectively.

Figure 1 illustrates levels of internet addiction where near half of Saudi and Egyptian students had mild and moderate internet addiction (47.7%, 45.3%, and 44.2%, 46.3% respectively). While severe IA was 0.9% in Saudi one compared to 0.3% in Egyptian students. No statistical significant relation was found between both groups in relation to internet addiction.

Figure 1 illustrates levels of internet addiction where near half of Saudi and Egyptian students had mild and moderate internet addiction (47.7%, 45.3%, and 44.2%, 46.3% respectively). While severe IA was 0.9% in Saudi one compared to 0.3% in Egyptian students. No statistical significant relation was found between both groups in relation to internet addiction.

Table 3. Internet uses in both groups

Variables	Teenagers’ nationality	Saudi Arabia (n = 331)	Egypt (n = 337)
		n (%)	n (%)
Use of internet			
Daily		285 (86.6)	231 (69.6)
Every two days		20 (6.1)	30 (9.0)
Every three days		9 (2.7)	24 (7.2)
Weekly		12 (3.6)	38 (11.4)
Others		5 (1.5)	14 (4.2)
Daily usage of internet in hours			
< 1 hour		46 (13.9)	89 (26.4)
1 < 3 hours		85 (25.7)	68 (20.2)
3-5 hours		143 (43.2)	58 (17.2)
No certain time		57 (17.2)	22 (6.5)
Places of internet uses**			
Bedroom		199 (60.1)	88 (26.1)
Dining room		88 (26.6)	122 (36.2)
Outdoor		150 (45.3)	55 (16.3)
No certain place		211 (63.7)	198 (58.7)
Purpose of internet uses**			
Assistance in academic achievement& studying		125 (37.7)	189 (56.1)
Recreation & employment of leisure time		156 (47.1)	111 (32.9)
Social communication		201 (60.7)	224 (66.5)
Shopping		24 (7.2)	13 (3.9)

**More than one purpose of internet use

Table 4. Data related to musculoskeletal pain with internet uses in both groups

Variables	Teenagers' nationality	Saudi Arabia (n = 331) n (%)	Egypt (n = 337) n (%)
Musculoskeletal pain with internet uses			
Yes		246 (74.3)	227 (67.3)
No		85 (25.7)	110 (32.7)
Severity of pain			
Not constant		19 (5.7)	73 (21.7)
Mild		127 (38.4)	71 (18.1)
Moderate		80 (24.2)	72 (21.4)
Sever		20 (6.4)	11 (3.3)
Sites of pain			
Hands		73 (22.1)	67 (19.9)
Neck		68 (20.5)	61 (18.7)
Back		61 (18.4)	43 (12.8)
Shoulders		24 (7.3)	33 (9.8)
Head		17 (5.0)	17 (5.0)
Other, as eye pain		3 (0.9)	6 (1.8)
Characters of pain			
Numbness		54 (16.3)	39 (11.6)
Acute/sharp		31 (9.4)	63 (18.7)
Throbbing		35 (10.6)	76 (22.6)
Hotness		126 (38.1)	49 (14.5)

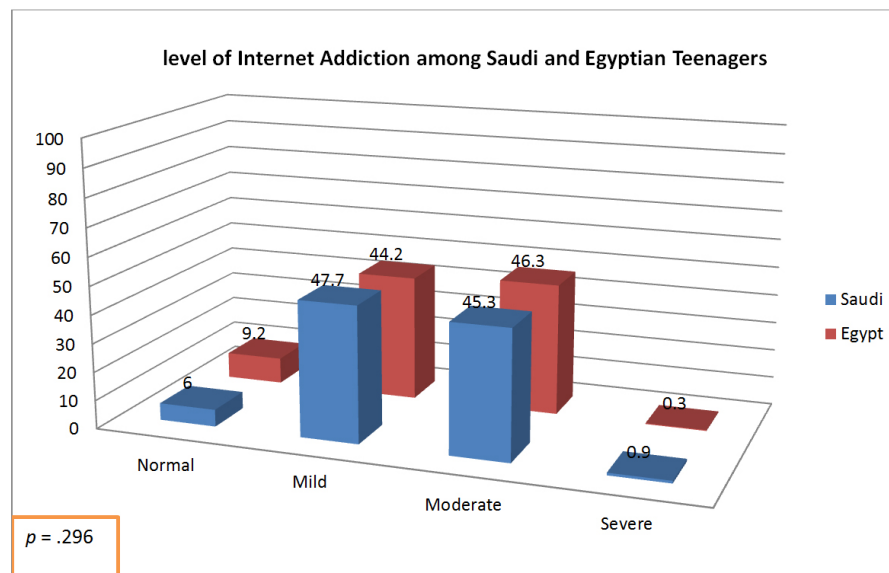


Figure 1. Percentage distribution of internet addiction among Saudi and Egyptian students

Table 5 shows the distribution of different levels of the Internet Addiction by Saudi student's in relation to socio-demographic characteristics. Usage of the internet was similar among males and females ($p = .865$). Also, there was no significant difference in the students' order among his/her brothers ($p = .564$), and social status ($p = .075$). Regarding

the academic level of the students, the intermediate students were using the internet more than secondary students with statistically significant differences ($p \leq .001$). In related with academic achievement, the most frequent internet users were achieved high level academic performance with statistically significant differences ($p = .037$).

Table 5. Correlations of Saudi students' socio-demographic data and level of internet addiction

Internet addiction level Variables	Addiction level(n = 331)				Test statistic & p value
	Normal (N = 20) %	Mild (N = 158) %	Moderate (N = 150) %	Severe (N = 3) %	
Gender					
Male	16 (5.8)	131 (47.8)	124 (45.3)	3 (1.1)	Chi-square = 0.736 p = .865
Female	4 (7.0)	27 (47.4)	26 (45.6)	0	
Arrangement the child among his brothers					
First	6 (8.1)	35 (47.3)	31 (41.9)	2 (2.7)	Chi-square = 16.412 p = .564
Second	5 (9.1)	26 (47.3)	23 (41.8)	1 (1.8)	
Third	5 (6.2)	35 (43.2)	41 (60.6)	0	
Fourth	2 (6.5)	18 (58.1)	11 (35.5)	0	
Fifth	0	17 (50.0)	17 (50.0)	0	
The last	2 (4.0)	22 (44.0)	26 (52.0)	0	
The only	0	5 (83.3)	1 (16.7)	0	
Social status					
Live with parents	15 (5.3)	143 (50.9)	120 (42.7)	3 (1.1)	Chi-square = 15.619 p = .075
Live with mother	3 (15.0)	4 (20.0)	18 (65.0)	0	
Live with father	2 (11.8)	5 (29.0)	10 (58.8)	0	
Others	0	6 (75.0)	2 (25.0)	0	
Academic level					
First intermediate	4 (33.3)	3 (25.0)	5 (41.7)	0	Chi-square = 42.340 p ≤ .001**
Second intermediate	0	39 (46.4)	44 (52.4)	1 (1.2)	
Third intermediate	5 (9.8)	20 (39.2)	24 (47.1)	2 (3.9)	
First secondary	5 (7.2)	30 (43.5)	34 (49.3)	0	
Second secondary	1 (1.3)	47 (61.0)	29 (37.7)	0	
Third secondary	5 (13.2)	19 (50.0)	14 (36.8)	0	
Level of academic achievement					
Excellent	9 (6.0)	73 (48.7)	67 (44.7)	1 (0.7)	Chi-square = 17.865 p = .037*
Very good	4 (3.1)	59 (45.0)	66 (50.4)	2 (1.5)	
Good	6 (24.0)	13 (52.0)	6 (24.0)	0	
Average	1 (4.0)	13 (52.0)	11 (44.0)	0	

* p ≤ 0.05; ** p ≤ .01

Table 6 shows the distribution of different levels on the Internet addiction scale by the Egyptian student's in relation to socio-demographic characteristics. A statistical significant difference in gender where ($p = .051$), arrangement of the students' among his/her brothers ($p = .855$), social status ($p = .481$), academic level ($p = .109$), and level of academic achievement ($p = .065$).

4. DISCUSSION

Teenagers are at a higher risk to develop IA due to their cognitive immaturity, the physiological, psychological changes in addition to their academic needs and stresses that make them unable to control the time spent online.^[28,29]

The relation between internet-related activities and self-rated health complaints has become a public health concern, where adolescents' internet-use time has increased. While on the other hand their physical activity has decreased, resulting in

musculoskeletal problems.^[30]

According to the data of the present study, students' median age in both groups ranged from 15 to 16 years and the majority of Saudi teenagers were males (82.8%) while females participated 59.1% in Egyptian teenage. Regarding using the internet, academic achievement was 37.7%, social communication (60.7%) and entertainment (66.5%) in both groups. These finding in accordance with Karacic (2017) who found that the highest level of internet addiction was found among the adolescents aged 15-16 years due to their greater level of independence, their free time and social activities are less controlled by their parents. They used internet for school/work (20.2%) and entertainment (11.9%).^[31] Other study done by Miao (2017)^[32] found that Social networking, school work, entertainment, gaming and shopping ranked as the top five among all the online activities.

Table 6. Correlations of Egyptian students' socio-demographic data and their level of internet addiction

Variables	Addiction level (n = 337)				Test statistic & p value
	Normal (N = 31) %	Mild (N = 149)%	Moderate (N = 156) %	Severe (N = 1) %	
Gender n (%)					Chi-square =
Male	7 (5.1)	58 (42.0)	72 (52.2)	1 (0.7)	0.767
Female	24 (12.1)	91 (45.7)	84 (42.2)	0	p = .051
Arrangement the child among his brothers					Chi-square =
First	10 (8.4)	58 (48.7)	51 (42.9)	0	11.849
Second	10 (11.4)	31 (35.2)	46 (52.3)	1 (1.1)	p = .855
Third	4 (8.9)	20 (44.4)	21 (46.7)	0	
Fourth	2 (6.2)	15 (46.9)	15 (46.9)	0	
Fifth	2 (11.1)	8 (44.4)	8 (44.4)	0	
The last	3 (10.7)	15 (53.6)	10 (35.7)	0	
The only family	0	2 (28.6)	5 (71.4)	0	
Social status					Chi-square =
Live with parents	31 (9.9)	135 (43.1)	146 (46.6)	1 (0.3)	8.534
Live with mother	0	7 (46.7)	8 (53.3)	0	p = .481
Live with father	0	4 (66.7)	2 (33.3)	0	
Others	0	3 (100)	0	0	
Academic level					Chi-square =
First intermediate	9 (29.0)	10 (32.3)	11 (35.5)	1 (3.2)	21.970
Second intermediate	8 (3.1)	33 (45.0)	35 (50.4)	0	p = .109
Third intermediate	8 (16.0)	31 (52.0)	34 (32.0)	0	
First secondary	3 (18.8)	7 (43.8)	6 (37.5)	0	
Second secondary	3 (33.3)	3 (33.3)	3 (33.3)	0	
Third secondary	0	65 (49.2)	67 (50.8)	0	
Level of academic achievement					Chi-square =
Excellent	11 (12.0)	35 (38.0)	46 (50.0)	0	16.099
Very good	14 (8.7)	68 (42.2)	79 (49.1)	0	p = .065
Good	3 (5.8)	30 (57.7)	19 (36.5)	0	
Average	3 (9.4)	16 (50.0)	12 (37.5)	1 (3.1)	

According to literature, values used as reference points to characterize long electronic devices use time varies between 2 and 5 hours/day.^[33] Many studies found a positive relation between daily prolonged time use of internet and teenagers' internet addiction. And their clarification of causes that keep teenagers risky were inability to restrict their time on-line, especially when they engage in chat and community websites, and the availability of 24-hour internet service at homes.^[19,34,35]

The prolonged use of internet more than 3 hrs./day leads to internet overuse (Gamitoa 2016).^[36] The previous above mentioned studies incongruent with our study, where 86.6% of Saudi teenagers used the internet daily with 43.2% of them saying online from 3 to more than 5 hrs./daily, compared to 69.6% and 17.2% in Egyptian, that reflect elevation of IA among Saudi teenagers than in Egyptian one.

The availability of numerous devices could be associated

with a higher probability of internet access at any time and any place and away from parental control especially at teenagers' bedroom that had a positive relation to excessive internet usage and sleep problems,^[37,38] those results in similarity with the present study where IA was higher in Saudi teenagers 60.1% had internet access in their bedroom and 63.7% used it anywhere away from their parents control compared to 26.1% and 58.7 in Egyptian teenagers (see Table 3). The prevalence of IA in Asian countries was relatively higher than the prevalence reported in Europe and in the Middle Eastern.^[39,40]

The rapid growth of internet users in middle east exceeding and IA was 80% in some countries.^[41] A survey done in KSA and ARE (2007)^[42] showed that 54.6% from teenagers in both countries had IA. Also Pallanti et al. (2006)^[43] his study revealed that IA was 51.6%. Recently in KSA Al-hantoushi and Al-abdullateef (2014)^[34] found that the prevalence of IA was 50.7%. In Egypt, Reda et al. (2012)^[19] found that

22.1% of teenagers have a problematic internet use, and 8% proved to have internet addiction.

The above previous mentioned studies support and in covenant with the present study where internet overuse increased to be 94% in Saudi students compared to 88% the Egyptian one. Regarding the categories of IA according to IAT the present study estimated that near half of Saudi and Egyptian students had mild and moderate internet addiction (47.7%, 45.3%, and 44.2%, 46.3%) respectively, while 0.9% was severe in Saudi one compared to 0.3% in Egyptian. Those results were incongruent with Dawood et al. (2015)^[44] who found that 55.3% of Saudi students had average internet users. While 40.3% occasional or frequent internet related problems and only 4.4% of the participants experienced significant internet related problems. And also the study done by Srijampana et al. (2014)^[45] revealed that 64.4% were average users, 11.8% as possible addicts, and 0.4% as addicts.

A variety of physical problems are also associated with frequent internet use, including carpal tunnel syndrome, dry eyes, headaches, musculoskeletal complaints and pain or visual fatigue Anderson 2001.^[46] The study of American youth found a relationship between time spent at a computer and musculoskeletal discomfort that is described as musculoskeletal pain. Computer use is an important risk factor for children's health, because neck/shoulder and back pain in adolescence may result in early onset of musculoskeletal degenerative dysfunction (Hope et al.).^[47] Hakala (2006), and Gur, Sisman, Sener et al. (2016)^[48,49] found that teenagers whom sit on the internet for a long time experienced pain in the back, neck and arm, constipation, gas formation and eye tearing or redness.

Another two studies done by Saueressig et al. (2015)^[50] and Derbyshire et al. (2013)^[51] found that a significant relation between musculoskeletal pain complaints in both teenagers' genders and use of computers for more than 3 hours daily. In addition to physical activities, which improve musculoskeletal function and avoid muscle stiffness with excessive use of internet, it was malfunctioning and increasing the pain intensity. The results are incongruent with the present study where the majority of both groups had musculoskeletal pain.

Regarding the relation between teenager's socio-demographic data variables and IA, in the current study there was no statistical significant relation between IA and gender of teenagers' internet users in Saudi group but had a significant relation in Egyptian one where the females had more IA than males. This results in agreement with Sasmaz et al. (2014)^[52] who found no significant relation between gender and IA, while Rucker et al. (2015)^[53] found that the

females had IA more than males but disagree with Koyuncu et al. (2014)^[54] where males had IA than females.

The present study shows a statistical significant relation between IA and academic level where the intermediate school students were the highest internet users than secondary school students only in Saudi group and this result in corresponding with Sasmaz et al. (2014)^[52] and Wu et al. (2016)^[55] where the IA increased among the lowest level of secondary school compared to the highest level. The internet is considered as an indicator of social and educational class, in the present study the IA was higher in Saudi group rather than the Egyptian one, where the Saudi students 22% of their fathers had a postgraduates level of education compared to 3.6% in Egyptian one (see Table 2). This result is consistent with Lam et al. (2009)^[56] who found that IA was higher in teenagers whom their parents hold a university or higher education, this may be due to the more access of internet than the other groups.

The previous result in contrary with Tekkant & Topalglu (2015),^[57] results that reflected higher IA in students whose fathers were primary-secondary school graduates. Also the current study found that IA was higher in Saudi group than the Egyptian one where the Saudi students, 27.4% and 11.3% of their mothers who are graduates and postgraduates level of education, compared to 18.1% and 3.6% in Egyptian one (see table 2). This result is consistent with Tekkant and Topalglu (2015)^[57] and Koyuncu et al. (2014)^[54] while inconsistent with Malak et al. (2017).^[16] Who found the prevalence of IA was higher in students whose mothers' educational level was a secondary graduate.

The current study revealed that the most users of internet in Saudi group were achieved high level of academic performance with statistically significant differences (see Table 5) and this result in disharmony with Malak et al. 2017;^[16] Al-hantoushi & Al-abdullateef (2014)^[34] whom found that students with poor academic performance had higher levels of IA. On the other hand the Egyptian group had no statistical relation between level of academic performance and IA and this result in agreement with Hawi (2012)^[58] who found that no relation between level of academic performance and IA.

Parents play an important role in teenagers' life and many studies found that a single parent was a risk factor of IA, particularly for those living with the father only Jablonska & Lindberg (2009)^[59] and Wang et al. (2016),^[60] but was less in those whom live with their mothers due to the more exercise of control and maternal influences are stronger than that of paternal influences (Shek 1998).^[61] The above mentioned three studies in harmony with this study where the percentage of IA was highest in Saudi students whom live with their

fathers than their mothers (see Table 5), while the IA decrease in Egyptian students where the majority of them live with their parents (see Table 6). Further research is required to address different risk factors for internet addiction.

4.1 Limitation of the study

The current study is not without limitation, using a convenience sampling technique affected the generalizability of the study results to specific geographic regions in both countries and data collection was based on self-reported questionnaires which are prone to recall bias.

4.2 Recommendation and suggestions

Based on the results of the present study, the researchers suggest further studies to be conducted in this field on a larger sample size for both genders to identify the other factors related to creating Excessive Internet Use. School specialists and parents pay more attention to their teenagers to identify the internet addiction signs and the balance between the internet use, academic study and social life. An intensive awareness program to be prepared targeting school specialists and parents regarding the adverse effect of internet use on children and how to deal with it. Students should be oriented to negative issues of excessive use of the internet that may effect on their health, social and family relationships.

5. CONCLUSION

The present study provided useful information about internet addiction among Saudi and Egyptian school students to address this problem. Near half of participants had mild and moderate internet addiction. There is no statistically significant relation was found between both groups in relation to IA. Also it shows the majority of both groups had musculoskeletal pain also it shows a statistically significant relation between IA and academic level where the intermediate school students were the highest internet users than secondary school students in Saudi group.

BIO STATEMENT

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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