

The Effect of High Internet Use on Health of Adolescents

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Abstract

Background: Adolescents are in a vulnerable age, they may be prone to high Internet use and its negative effects on their health. So controlling the pattern of internet usage is very important. **Aim:** The study aimed to evaluate the effect of high internet use on health of adolescents. **Study design:** A descriptive design was used in this study. **Subject:** Multistage sample composed of 800 adolescent students. **Setting:** This study was carried out at El kobba, saraya El kobba, Ensaf serry, talae Gaber, Amon secondary schools, at Elzayton administrator. **Tools:** It composed of two tools. The first tool is self-administered questionnaire to assess socio-demographic characteristics, pattern of internet use, social and psychological health condition of adolescents using internet. The second one is physical assessment sheet is also used to assess physical status of them. **Results:** The results of this study clarified that 33% of study sample their ages were 17 years or more, 69.5% of them are male, 84.6% of them, their pattern of internet use were moderate pattern and 15.4% of them were high pattern, 17% of the study sample with high pattern of internet use had high negative physical health effect, 65.5% of them had high negative social health effect, while 49.1% had high negative psychological health effect. **Conclusion:** There were a significant statistical relation between the pattern of internet use and the physical, social, psychological, health status of adolescent, and there were also a statistical significant relation between the pattern of internet use and scholastic achievement of adolescent. **Recommendations:** The study recommended that, continuous assessment for adolescent s health status at school and at their homes is essential, conducting educational programs for students, parents about proper use of internet, limiting hours spent on the internet, proper body mechanics during internet usage, design pamphlets about the health hazards of high internet usage for secondary schools students and design short programs in the mass media to increase awareness of adolescents and their parents about hazards of high internet usage.

Keywords: High internet Use, Adolescents.

Introduction

Adolescence is a period of life with specific health and developmental needs and rights. It also a time to develop knowledge and learning skills, learn to manage emotions, relations, acquire attributes and abilities that will be important for enjoying the adolescent years and assuming adult roles. All societies recognize that, there is a difference between being a child and becoming and adult. How this transition from childhood to adulthood is defined and

recognized differs between cultures and over time (*WHO, 2017*).

It also defined as the period between 13 and 18 or 20 years, a time that serves as a transition between childhood and young adulthood. It can be divided into an early period (10-13 years), a middle period (14-16 years) and a late period (17-19 years). Adolescence is the period of growth between childhood and adulthood, this transition from one stage to the other is

gradual, uncertain and while the time. It can divide into an early period (13-14years), a middle period (15-16 years) and a late period (17-20 years) (*Pillitteri, 2013*).

The internet and mobile technology are increasingly important to the educational and social lives of adolescents, and are becoming a part of the identity with the advent of broadband and mobile access to the internet giving young people access to the internet any place and at any time for entertainment and communication, there is a real risk that adolescents can become so immersed in the online world. It is easy to young people to spend many hours pursuing their interest, playing, games, finding information and communicating with friends and strangers online when this use becomes obsessive, this could be problematic and could ever be classified high internet use (*Bhatia, 2016*).

Adolescent internet use is a relatively recent phenomenon. Adolescents were found to be particularly vulnerable to the negative health impacts of Internet overuse. Among the negative health effects of internet on adolescents is exposure to sexually explicit material, sexual grooming, bullying, internet addiction, cognitive developmental consequences, and increased risk taking behavior, lack of face to face communication, Waste of time, abandonment of family, insomnia, internet addiction, cheating, moral corruptions, and physical inactivity (*Brown, 2017*).

High internet usage is a type of psychological addiction and is defined as a form of behavior that is linked to persistence in on activity that causes decrease in health, social functioning and quality of life. It can also defined as overuse of the Internet leading to impairment of an individual's psychological state (both mental and emotional), as well as their scholastic or

occupational and social interactions (*Prabhakaran, 2016*).

Adolescents with high internet use need supportive environment to help them in controlling their pattern of internet use. The school nurse coordinates with the class teacher to teach adolescents the proper use of internet. She must keep posters near classroom to remind students what they can and can't do when browsing and tell them about the approved internet sites. She must also encourage students to ask her if they encounter inappropriate sites. Teaching them to avoid downloading something with viruses as it can harm mobiles or computers. Reminding the students not to use tablets, mobiles or laptops when they at chargers. Avoid eating and drinking when using the internet (*Sanders, 2015*).

The community health nurse has an important role toward high internet use adolescents such as she can provide tools that help in early detection and diagnoses of high internet use. She differentiates between high internet use and other psychiatric conditions. She creates programs and therapies to address high internet use. Highlight the psychological, social, and family conditions for those most at risk. She explores the physical effects that result from high internet use and strategies for combating the problem. She also helps in setting policies and procedures to increase awareness of excessive internet use for adolescents and parents. She provides strategies for treatment and prevention in family, school, and community settings (*Young, 2017*).

Significance of the Study:

According to the internet usage statistics, internet users are increasing in Egypt reaching about 47.4 million users in 2018, compared to 40.9% in 2016. More than 80% of the highest Egyptian internet

café clients are adolescents. Increasingly usage of computer technology and widespread dominance of the internet has faced many people particularly adolescents and extremely usage of it results in mental and psychological disorders. Adolescents are believed to be at a high risk with a marked increase in their internet usage worldwide (*Statista, 2018*).

The community health nurse identifies the reason for internet use. She also make continuing education on the pattern, way of internet use. CHN takes a look around, and see if adolescents hold their phones almost continuously at school and ask parents about their teens at homes. Asking parents to limit the time spent on computers and smartphones or limit the megabytes given to their teens (*Wieland, 2014*).

Aim of the Study:

This study aims to evaluate the effect of high internet use on health of adolescents through:

- Assessing of physical, social & psychological health status of adolescents using internet.
- Assessing of scholastic achievement of adolescents.
- Assessing the pattern of internet use among adolescents.

Research Questions

- Is there a relation between the pattern of internet use and physical health status of adolescent?
- Is there a relation between the pattern of internet use and psychosocial health status of adolescent?
- Is there a relation between the pattern of internet use and scholastic achievement of adolescent?

Subjects and Methods:

Research design

A descriptive design was used to carry out this study.

Study setting:

This study was conducted at El Zayton administrator which was chosen because it contained the largest number of secondary schools. four governmental and one non-governmental secondary schools in El Zayton educational administrator are chosen and their names are (El Kobba military secondary school for males, Ensaf Serry secondary school for females, Talae Gaber Elansary secondary school for males and females, Saraya El-kobba secondary school for females and Amon private secondary school for males and females).

Subject of the study:

The study was including a multistage sample, in Cairo Governorate there were 20 educational administrative districts, El Zayton administrator which was chosen. It contained 10 governmental and non-governmental secondary schools. This study was conducted in 5 schools.

Type of sample: simple systemic random sample (every 2 schools). This sample contained 800 students' adolescents which represent approximately 10% out of (7672).

Two tools were used for data collection which designed by the investigator in Arabic language after reviewing the related recent literature. The questionnaire included closed-ended questions, some with yes or no response, and some with 5 possible responses. It was the following:

Tools of data collection:

1st tool: Self administrated questionnaire was designed after review related literature. It was written in simple Arabic language by the investigator. The questions were composed of 71 close ended questions. It consisted of 3 parts:

Part I: To assess socio-demographic data for adolescents. It composed of 10 closed ended questions about (age, gender, birth order, and parent's educational level, and parent's job, family crowding index, family income, and family type).

❖ Scoring system of the family crowding index:

Formula adapted from American Association of public opinion research, (2007): crowding index = number of persons in household/number of rooms used for sleeping. Less than 3 was considered not crowded and more than 3 considered over crowded.

Not crowded family: (>3)
Overcrowded family: (<3)

Part II: to assess adolescent pattern of internet use. It adopted from Young (2015) and modified by the investigator. It based on literature and supervisors opinion to assess present pattern of internet use of adolescents. It composed of 27 closed ended questions such as (The number of hours spent online, the number of hours spent on the internet for fun or play, time of using the internet, frequency of internet use, pattern of checking e-mail, most common web sites used, reasons of internet use, number of items saved from internet, primary source of information, ability to use internet without help, the degree of importance of facebook, the device used for internet use, complain).

❖ Scoring system of total pattern:

- From Q 1: Q 15 the scoring system is scored as Likert scale 5 categories (never-rarely- sometimes- usually- always) and took from 0-4.

- From Q 16- Q 27 the scoring system as (yes) or (no) and the answered item (yes) took score (1) and answered (no) took score (0).

The total score of items were summed-up and converted into percent which classified into 3 categories:

Low pattern: < 50% Moderate
pattern: 50-75%
High pattern: > 75%.

Part III: To assess social, psychological and physical health condition and scholastic achievement of adolescent with high internet use. It composed of 34 closed ended questions such as (considering social media their world, decreasing chances for presence of social events, feeling more respect and attention on the internet than in real life, lying on the internet, feeling that life is dull, empty and bleak without the internet).

2nd tool: Physical examination sheet: to assess physical health status of adolescents with high internet use. It composed of 9 closed ended questions such as body mass index, eyes, ears, mouth, skeletal system, chronic diseases, and family history.

❖ Scoring system of BMI:

BMI was calculated as following: according to *Theodore & Elena (2009)*:
BMI= Weight (kg)/Height (m)²

BMI was categorized as: Under weight: 16- 18.4, normal weight: 18.5-24.9, overweight: 25-29.9, obesity: 30 and more.

Operational design

The operational design includes the preparatory phase, pilot study, and field work.

A- Preparatory phase:

During this phase the researcher reviewed of past and current local and international related literature, and theoretical knowledge which helped her to be more acquainted with the problem, and

the process of tools designing then tools were reviewed for implementation.

B- Pilot study:

A pilot study was carried out during 2016, involving 80 adolescents, which represent 10% of total sample to test the feasibility of the study tools in terms of its applicability, time needed to complete this questionnaire. There is no modifications were done as revealed from the pilot study result.

c- Field Work:

Reviewing of relevant literature and getting expert's opinions were helpful to assist in designing and processing of the data collection instruments. The work started by giving the formal letters to each director of secondary schools in Cairo Governorate. Assessment and data collection phase started by the investigator introducing herself to the adolescents. Then, the researcher gave them a brief idea about the study aim and its items verbal consent was obtained from the adolescents to share in the study, the researcher interviewed with available adolescent at that time. Data was collected using the constructed tools. Any clarification needed from others were done by the researcher, took into consideration using simple and clear Arabic language.

Questionnaires were completed by adolescents and researcher herself and the average time needed for the completion of each form was around 20 to 30 minutes. The researcher completed the physical assessment sheet. The questionnaire filled while the physical assessment sheet for adolescents was accomplished within 60 minutes.

This interviewing aimed to identify the effect of high internet use on physical, social, psychological health and scholastic achievement of adolescents. Data were collected over 6months period from the

beginning of December, 2016 to end of February 2017 two days per week Mondays and Wednesdays during the school times (8 am to 2 pm). The meetings with the adolescents were done at their classes.

Administration design:

Permission for data collection was obtained by submission official letters from Dean of faculty of Nursing – Ain Shams University to the educational affairs to get approval to collect data from El-Zayton administrator and to headmasters of schools.

Ethical consideration:

Oral consent was taken from the adolescents and no one was forced to answer questions. An agreement was issued to El-Zayton administrators and the headmasters of the schools to help in conducting study. Also, an agreement was taken from the ethical committee in faculty of nursing; Ain Shams University.

Statistical Design:

Data were revised, coded, analyzed, and tabulated using the Statistical Package for Social Sciences (SPSS) software program, version (20). Qualitative variables were expressed as percentages and compared in different groups using the Chi-square test (χ^2). The test compares the frequencies in different groups to theoretical values under the null-hypothesis. However, whenever the test was inapplicable for small figures in a cell, adding up of adjacent cells was carried out, to avoid false significant conclusions.

Results

Table (1): shows that, 33% of adolescents their ages are 17 years or more while 28.5% of them are 16 years, and 69.5% of them are male while, 30.5% are female. According parents' educational level, 11% fathers were no read and write, also 18.5% of their mothers were no read and write, also this table presents that 56.5%

adolescent's fathers were employees while, 58.5% of their mothers were house wives.

As regard family crowding index there were 3.5% of the adolescents' families live in overcrowded homes and 46%, of adolescent's family incomes hadn't enough income and 80.9% of them were nuclear families.

Figure (1): illustrates that 84.6% of adolescents their pattern of internet use were moderate pattern and 15.4% of them were high pattern.

Figure (2): illustrates that 17% of the study sample with high pattern of internet use had high negative physical health effect, 65.5% of them had high negative social health effect, while 49.1% had high negative psychological health effect.

Table (2): shows that 1.9% of adolescents using internet had grade "poor" at the previous year, while 12% of them had grade "fair" and 40.9% had grade "good"

Figure (2): Distribution of adolescents according to their total effect of high internet use on physical, social, and psychological health status.

Table (3): clarifies that there are statistical significant differences between total pattern of internet use and adolescent's physical and Psychological health status effect, while there are high statistical significant relation between total pattern internet use and Psychological health status with $\chi^2 = 6.932, 21.399, 8.167$ respectively and p value 0.008, 0.000 and 0.004.

Part I: Socio-demographic characteristics for adolescents and their parents.**Table (1):** Distribution of adolescents according to their socio- demographic characteristics (n=800).

ITEMS	No	%
Age		
14 years	92	11.5
15 years	228	28.5
16 years	268	33.5
17 years	120	15.0
18 years	92	11.5
Gender		
Male	556	69.5
Female	244	30.5
Birth order		
First	236	29.5
Second	152	19.0
Third or more	412	51.5
Father's educational level		
No read and write	88	11.0
Secondary school	404	50.5
University	308	38.5
Mother's educational level		
No read and write	148	18.5
Secondary school	436	54.5
University	216	27.0
Father's job		
Employee	452	56.5
Worker	84	10.5
Administrator	108	13.5
Retired	156	19.5
Mother's job		
Employee	232	29.0
Worker	72	9.0
House wife	468	58.5
Retired	28	3.5
Family Crowding Index		
Overcrowded (> 3)	310	38.8
Not crowded (< 3)	490	61.2
Family income		
Enough	432	54
Not enough	368	46.0
Family type		
Nuclear family	648	80.9
Extended family	152	19.1

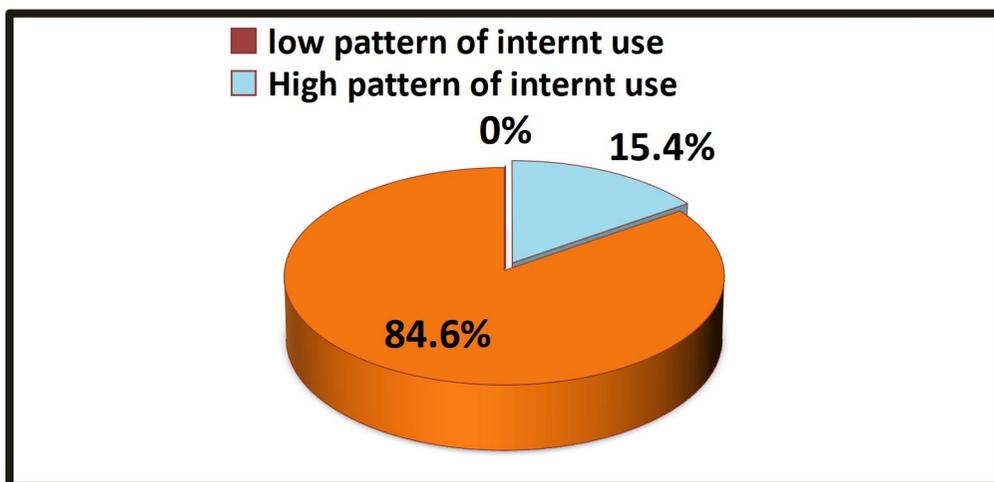


Figure (1): Distribution of adolescents according to their total pattern of internet use (n=800).

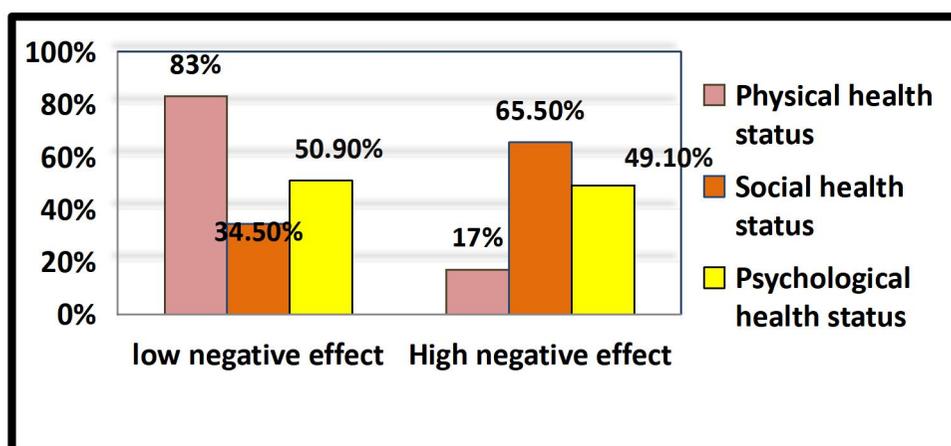


Figure (2): Distribution of adolescents according to their total effect of high internet use on physical, social, and psychological health status.

Table (2): Relation between total pattern of internet use and adolescents ' scholastic achievement (n=800).

Scholastic level at previous years	Pattern of internet use					Chi-Square value P. value	
	Moderate pattern		High pattern		Total		
	No	%	No	%	No		%
Poor	12	1.5	4	0.4	16	1.9	20.817 0.000***
Fair	68	8.5	28	3.5	96	12.0	
Good	273	34.5	51	6.4	324	40.9	
Very good	240	30.0	28	3.5	268	33.5	
Excellent	84	10.5	12	1.5	96	12.0	

***Highly significant

Figure (3): Relation between total pattern of internet use and adolescents ' scholastic achievement (n=800).

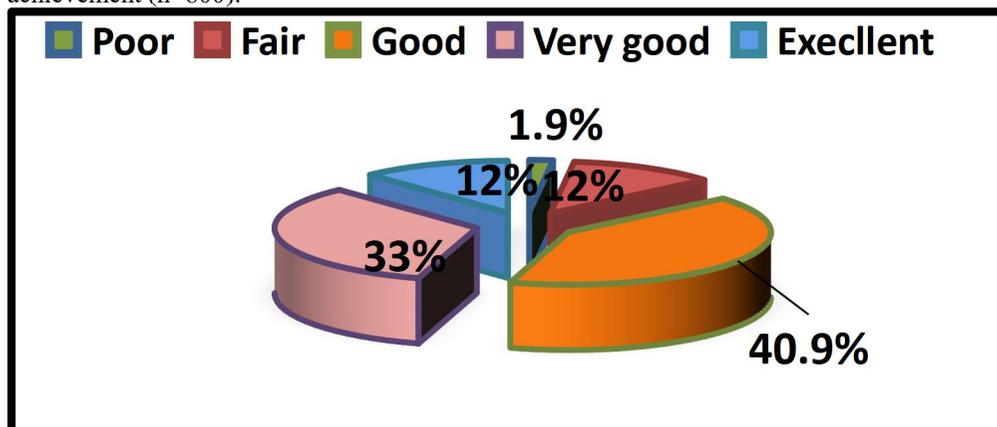


Table (3): Relation between total pattern of internet use and adolescents ' Physical, social, and psychological health status effect (n=800).

	Pattern of internet use						Chi-Square value P. value
	Moderate pattern		High pattern		Total		
	No	%	No	%	No	%	
Physical health status effect							
Low negative effect	572	65.9	92	11.5	664	83.0	6.932
High negative effect	105	13.1	31	3.9	136	17.0	0.008**
Social health status effect							
Low negative effect	256	32.0	20	2.5	276	34.5	21.399
High negative effect	421	52.6	103	12.9	524	65.5	0.000***
Psychological health status effect							
Low negative effect	359	44.9	48	6.0	407	50.9	8.167
High negative effect	318	39.8	75	9.3	393	49.1	0.004**

**Significant

***highly significant

Discussion:

Regarding to parent's educational level, this study showed that more than one tenth of the adolescent's fathers were no read and write (**Table1**). This result matching with **Tsitsika A, Janikian M, Schoenmakers T, et al (2014)** who conducted his study on school students in seven European countries and stated that, adolescents whose parents had higher educational level had a lower probability of showing dysfunctional internet use.

In my point of views this occurs because the high educated parents have more awareness about effect of internet use so, they have more supervision and control on their sons and on the content they use in the internet.

Regarding to family crowding index, more than one third of adolescents life in crowded settings (**Table1**). In my point of views the more crowded family, the less control and supervision among adolescents, so they do what they want without control.

This study showed that more than three quarters of the study sample had moderate pattern and more than one tenth of the study sample had high pattern (**Figure 1**). This result matching with **Bhatia, Rajpoot, Dwivedi, (2016)** who conducted the study on 300 students in three private schools in the city of Gwalior, Madhya Pradesh, who stated in the study which entitled "Pattern of internet addiction among adolescent school students of a North Indian city", that 60.34% had mild addiction; 24 % had moderate addiction and 6.3% had severe addiction.

This study revealed that there were highly statistical significant differences between total pattern of internet use and adolescent s scholastic achievement. (**Figure 2 and table 3**) This finding congruent with **Arbabisarjou, (2016)**, who conducted his study on 3727 student including (2351 females and 1376 males) who were studying at Zahedan University of Medical Sciences in 2014-2015 semester in Iran, who stated in his study that Results of his study had shown a significant association between internet addiction and educational achievement among students. So that subjects who suffered from internet addiction had academic failure.

This study clarified that there are statistical significant differences between total pattern of internet use and adolescent's physical and Psychological health status effect, while there are high statistical significant relation between total pattern internet use and social health status (**Figure 2**). This result matching with **Goel, Subramanyam and Kamath, (2013)** who conducted the study on 987 students in the city of Mumbai, who stated in the study which entitled "A study on the prevalence of internet addiction and its association with psychopathology in Indian adolescents", that internet addicts in the study have poor psychological, physical, and social health score.

Conclusion

As regard the research question of the present study, it was concluded that: There were a significant statistical relation between the pattern of internet use and the physical, social, psychological, health status of adolescent, and there were also a statistical significant relation between the pattern of internet use and scholastic achievement of adolescent.

Recommendations

In the light of present study findings, the following recommendations are suggested:

- 1- Continuous assessment for adolescent s health status at school and at their homes is essential.
- 2- Conducting educational programs for students, parents about proper use of internet, limiting hours spent on the internet, proper body mechanics during internet usage.
- 3- Further researches by using longitudinal studies to determine the relationship between Internet usage and school performance.
- 4- Design and disseminate pamphlets about the health hazards of high internet usage for secondary schools students.

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