

## Electronic Media Use and its relation to Social Skills and Sleep Quality among Adolescents

*Hadeer Hussien Soliman<sup>1</sup>, Ebtahal Galal Fathy Mohammed<sup>2</sup>, Manal Farouk Mohamed<sup>3</sup>*

(1) Lecturer of Pediatric Nursing, Faculty of Nursing, Suez Canal University.

(2) Lecturer of Family and Community Health Nursing, Faculty of Nursing, Suez Canal University.

(3) Assistant professor of Pediatric Nursing, Faculty of Nursing, Suez Canal University.

### Abstract

**Background:** Electronic devices play an important part in the social lives of adolescents; however, they can affect sleep of adolescents, in a negative way. **Aim:** the aim of this research was to describe electronic media use and its relation to social skills and sleep quality among adolescents. **Design:** A descriptive correlational design was used. **Setting:** the study was carried out at 4 schools which selected randomly and named Khadija Preparatory School, 24th of October Preparatory Language School, Al-Farouq Omar Bin Al-Khattab Secondary School for Boys, and October 24 Secondary Language School for Girls at Ismailia city. **Sample:** The cluster random sample of adolescents was included. **Data Collection Tools:** three tools are used; **1<sup>st</sup> tool: Semi-structured Interview Questionnaire** was developed to collect: 1-Sociodemographic data; about the studied adolescents it included data about age, sex, and educational level. 2- Electronic media use; to measure the use and effects of electronic media on adolescents. **2<sup>nd</sup> tool: Social Skill Scale (SSS) for adolescents** measured 3 dimensions of social skills of adolescents which included getting along skills, attributes and friendship skills, **3<sup>rd</sup> tool Arabic Pittsburgh Sleep Quality Index:** assess sleep quality disturbances over a 1-month time interval. **Results:** revealed that more than half of the studied adolescents used electronic media when they were mentally upset, encounter a specific problem, feeling isolated and got kind of frustrated. Also, As well more than half of them had poor sleep quality level. **Conclusion:** There was a statistically negative linear relationship between social functioning, sleep quality and electronic media use with  $r = -.309$ ,  $r = -.292$  P value  $< .001^*$  respectively. **Recommendations:** Increase awareness of parents and their adolescents to avoid negative effects of electronic media use on sleep quality and social functions through giving educational programs.

---

**Key Words:** Adolescents, Electronic media, Social skills, Sleep quality,

### 1. Introduction:

Adolescents nowadays are familiar with the use of digital devices. Adolescents use a variety of electronic media at home,

such as television, smartphones, video players, radio, gaming equipment, and computers. The total daily screen time across all devices has increased from 5 hours/day in 1996 to 8 hours/day in 2016.

Long-term use of electronic media can have various impacts, including physical and psychological health problems such as obesity and sleep disorders. Sleep disorders in adolescents may be caused by organic or nonorganic factors. Several studies have discussed the relationship between increased screen time intensity and reduced sleep duration and quality. The effects of electronic media use may affect adolescents both positively and negatively. One of the negative impacts is the occurrence of sleep disturbances which are influenced by several factors (**Argiansya et al., 2021**).

Electronic media has become a central part of the lives of adolescents. They are intensive users of new technology that rising rates of electronic media use might be harmful. Different types of electronic media use might be associated with emotional and behavioral problems. Adolescent's consumption of electronic media is increasing, resulting in large part from technological transformations, easy access to, and ownership of mobile devices, especially cell phones and popular activities like social networking. The increase in the use of electronic media is exposing adolescents to electronic aggression, or harassment or bullying that occurs through

email, chat room, and social media. Screen time might impact sleep by fostering irregular bedtimes. Besides, it is too exciting especially at bedtime, and exposure to light can alter melatonin secretion which puts impact on mental health indirectly (**Parida et al., 2020**).

In addition to the entertainment aspects, electronic devices play an important part in the social lives of adolescents. A more active, stimulating and social media use may, however, affect sleep in a negative way. The high rate of media use in adolescence may be one factor that is related to the short sleep duration and late bedtimes. TV use has consistently and inversely been associated with sleep duration, as well as delayed bedtime and wake-up time in adolescents. A high level of computer use has been found to be related to sleep problems, reduced time in bed and increased SOL. Overall, electronic media use has been consistently linked with delayed bedtime and shortened sleep, according to a review of the literature (**Hysing et al. 2015**).

Different forms of electronic media might have differential effects on adolescents' sleep and mental health. While computer use, electronic gaming, and phone use all tend to be associated with sleep and

circadian problems, television viewing was suggested to have a lower risk of psychological distress when compared to the use of other electronic devices. Although computer usage is beneficial for the acquisition of knowledge and new ideas (via the Internet), exposure to age-inappropriate content may affect emotion and other internalizing problems in adolescents. Furthermore, the accompanying arousal during electronic gaming may exacerbate hyperactive behaviors (Zink et al., 2020).

### **Significant of the study:**

Electronic media use (EMU) is associated with adolescents' development and mental health. Adolescence is a critical transitional stage in physical, behavioral, and psychosocial development. Brain regions involved in extensive developmental transformation during adolescence are particularly impacted by electronic media use (EMU). Meta-analyses reported the association of excessive EMU with depressive symptoms and psychological distress in adolescents. Excessive EMU (such as computer use, talking on the phone, and television viewing) may affect the holistic personal development of adolescents as it would replace other physical, social, and family activities. Adolescents with

excessive electronic media use are vulnerable to social, emotional, and behavioral difficulties (Wang et al., 2019).

There are little previous studies conducted regarding the impact of electronic media use on social skills and sleep quality in adolescents. So, the current study is **aiming to** describe electronic media use and its relation to social skills and sleep quality among adolescents.

### **Objectives:**

- Assess types of electronic media use among adolescents.
- Assess the social skills of adolescents.
- Assess sleep quality of adolescents.
- Determine the relation between electronic media use, social skills and sleep quality among adolescents.

### **Research questions**

-What are the relations between electronic media use and social skills among adolescents?

-What are the relations between electronic media use and sleep quality among adolescents?

## 2. Subjects and methods:

### Research design:

A descriptive correlational design was utilized to fulfill the aim of the current study

### Setting:

The present study was carried out at 4 schools which selected randomly and named Khadija Preparatory School, 24th of October Preparatory Language School, Al-Farouq Omar Bin Al-Khattab Secondary School for Boys, and October 24 Secondary Language School for Girls at Ismailia city, Egypt.

### The study participants:

A cluster random sample of adolescents was adapted in this study according to the following **inclusion criteria**: adolescents at preparatory and secondary grades (aged 12–17 years old). The **exclusion criteria**: adolescents who were not able to communicate verbally or had any mental disorders.

**Sample size:** Required sample size

$$n = \left[ \frac{Z_{\alpha/2} + Z_{\beta}}{\frac{1}{2} \log \frac{1+r}{1-r}} \right]^2 + 3$$

. (Dawson,2004)

**Were**  $n$ = sample size

$Z_{\alpha/2} = 1.96$  (The critical value that divides the central 95% of the Z distribution from the 5% in the tail)

$Z_{\beta} = 0.84$  (The critical value that separates the lower 20% of the Z distribution from the upper 80%)

$r = .34$  (Van Den Eijnden et al., 2018)

$n = 310$

**After adding 10% dropout, sample was 340.**

**Study tools and data collection:** *1<sup>st</sup> tool Semi-structured Interview Questionnaire* was conducted with adolescents to collect

**1-Sociodemographic data:** it included data about age, sex, and educational level, number of family members. Education and occupation of both the parents are also included.

**2- Electronic media use:** as the use and effects of electronic media on adolescents (Ali, 2017). It included questions about the following parts: a) The time and place of using electronic media. b) The circumstances in which the adolescent resorts to the use of electronic media.

**Scoring system:** The scoring option of this scale was based on the Likert type format

which ranges from 0-3. “0” for never, “1” for sometimes, “2 for often” and “3” for always.

**2<sup>nd</sup> tools: Social Skill Scale (SSS) for adolescents:** it is a self-report measure was developed by **Hamid et al. (2019)**. Social skill scale has 24 items. It measured the three dimensions of social skills of adolescents which include getting along skills, attributes and friendship skills in adolescents as following:

**a. Getting Along Skills:** the getting along skills are defined as the skills that an adult needs to get along with others and to manage ups and downs of life which is important for good mental health and wellbeing. These skills are gauged by eleven items such as “taking care of others’ feeling”, “helping each other in studies”, “being confident”, “amiable” and “could tell the difference between good and bad”.

**b. Social Attributes:** social attributes were referred to as the explanatory pattern that describes how adults tend to explain the various attributes of others to themselves. These attributes were gauged by six items such as “giving useful ideas to others”, “to be honest”, and “be courteous”.

**c. Friendship Skills:** friendship skills are

the skills that were based on a relationship that requires care, sharing, mutual interest, respect and trust. Friendship skills were gauged by seven items including “shares everything”, “don’t let you feel inferior”, “don’t talk inappropriately with others” and “never tell a lie”.

**Scoring system:** The scoring option of this scale was based on the Likert type format which ranges from 0-3. “0” for never, “1” for sometimes, “2 for often” and “3” for always.

**3<sup>rd</sup> tools Arabic Pittsburgh Sleep Quality Index:** The original PSQI was developed as a self-rated questionnaire by **Buysse et al. (1989)**, to assess sleep quality and sleep disturbances over a 1-month time interval. PSQI consists of 24 items, of which 19 are self-reported and 5 are to be answered by a spouse or roommate. The last 5 items on PSQI are not included in the assessment but only used as clinical data. The 18 items on the questionnaire were made up of 7 domains. These 7 domains are: subjective sleep quality, sleep latency, sleeps duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. The researchers used the Arabic version of Pittsburgh Sleep Quality (A-PSQI) (**Suleiman et al., 2010**).

### **Scoring system:**

Each dimension was scored on a 4-point Likert scale (0–3). The sum of scores for these seven dimensions gives a total score that ranges between 0 and 21, with higher scores indicating poorer sleep quality. The cut-off level of A-PSQI: good sleep quality (0–5) and poor sleep quality (6–21). As the total score falls, sleep quality increases (**Carpenter and Andrykowski, 1998**).

### **Procedures**

The study was executed according to the following steps:

#### **Ethical Committee approval number & details**

Ethical approval was received from the Local Research Ethics Committee of Suez Canal University under ethical committee approval number (208/2023) as found that the research satisfied the requirements of ethical approval criteria according to the rules and regulations of the National Committee of Bioethics.

#### **Approvals**

To carry out the study, ethical considerations were maintained to ensure participants' rights. The necessary official approval was obtained from the Faculty of Nursing, Suez Canal University and its

research ethics committee of faculty of nursing to obtain permission to conduct the study. To collect the necessary data after explaining the purpose of the study, and written permission was obtained from each adolescent before conducting the interview and after giving a brief orientation to the purpose of the study. Participation was voluntary, with the right to withdraw at any time and the confidentiality of the information obtained. Also, the adolescents were informed that the collected data would be used only for the purpose of the present study.

#### **Tools Validity and Reliability:**

Content validity was performed by five colleagues: Three professors from the Community Health Nursing Department and two professors from the Pediatric Nursing Department of the Faculty of Nursing. All experts were affiliated with Suez Canal University, Egypt. The developed tools were tested for reliability. The reliability test of the translated version was established by using Cronbach's alpha and Pearson correlation, which showed good internal consistency, construct validity. Cronbach's alpha coefficient test = 0.87 for Social Skill Scale, and 0.91 for Pittsburgh Sleep Quality.

### **Pilot study**

It was carried out on 10% of the sample (34 adolescents). It was conducted to test the study process and evaluate the applicability and test the content clarity, the feasibility of the research process, and the time needed to fill in the tools. According to the pilot study result, no modifications were made to the study tools.

### **Field Work**

After obtaining the needed approval from the Ethics committee, the researchers explained to them the purpose and objectives of the current study. A copy of the consent letter was sent to every parent participant of the research study. After their approval, the parents were asked to present the questionnaire to their adolescents.

The researchers were meet adolescents according to their attendance's schedule in their preparatory and secondary schools, that was two days per week for grades from the 1<sup>st</sup> to 3<sup>rd</sup> grades, attendance days are not less than four days per week in schools that work for one period, and if the school operates for two periods, the days of attendance were three days per week. Data was collected during academic year 2022 /2023 in second semester. The researchers met with the

adolescents during school breaks, games, or any free time they have away from school classes.

For the preparatory and secondary students who had a problem to fill questionnaire at schools, data collection was done by using Google forms. The link for Google form was sent to the key-informants through Whatsapp Messenger, Telegram. The interview data was collected through online voice calls and video interviews with parents and their adolescents. Both voice calls and video interviews approach took approximately 25-30 minutes to gather an adequate amount of information.

### **Statistical analysis**

Statistical presentation and analysis of the present study was conducted. Descriptive statistics were used to describe characteristics of the study subjects (e. g. frequency, percentages, mean, and standard deviation). Test of significance (Pearson correlation coefficient test) was used. Correlation coefficient was calculated between electronic media use, sleep quality and social functioning

*>0.05 Nonsignificant      <0.05\* significant*  
*<0.001\*\* High significant*

### **3. Results:**

**Table (1)** shows that less than two thirds (58.5%) of the studied adolescent's age was from 15-17 years. Also, (60.6%) of the studied adolescents were females. About (61.8%) of the studied adolescents had secondary educational level and less than two thirds (62.1%) of the studied adolescents were from urban areas.

**Table (2)** illustrates that, 68.3% of the studied adolescents had 4-5 family members live at home. More than half (56.3%) of the studied children; mothers were responsible for them at home and 41.6% of the studied adolescents use screen media with their siblings.

**Figure (1)** reveals that less than half (41.8%) of the studied adolescents used electronic media in more than one place while (37.1%) of them used electronic media at home.

**Table (3)** illustrates that, (74.4%, 46.2%, 46.2%, 46.2%, 55.6 % and 45.6%) of studied adolescents used TV or radio, sites to watch movies, electronic games, social media, computer or laptop, mobile phone or iPad more than or equal 2 hrs. respectively.

**Table (4)** clarifies that, 47.9% of the studied adolescents never used electronic media

when they felt comfortable while, 54.1% of them used electronic media when they were mentally upset, encounter a specific problem, feeling isolated and got kind of frustrated.

**Table (5)** clarifies that 45.6%, 57.9% and 31.5% of the studied adolescents never used electronic media to do homework, browse educational and literary websites, and get information on topics that interest. While 50.6%, 57.9%, 57.9%, and 53.5% of them sometimes used electronic media for occupied spare time, got information on topics that interest, and allowed expressing opinions freely and without restrictions. Also, 41.5%, 37.9%, 45% of the studied adolescents always use electronic media to connect with friends and family, browse social networking sites such as Facebook, Twitter, YouTube, and others, for watching movies and series.

**Table (6)** clarifies that, 19.4%, 21.2%, 16.8% of the studied children never being harassed or blackmailed by unknown people on the Internet; imitate some of what see on electronic media, difficulty control the duration of daily use of electronic media, use the Internet to access porn sites. While 37.6% of them sometimes difficulty control the duration of their daily use of electronic



media, searched for romantic relationships, and used the Internet to access porn sites. Also, less than two thirds (61.5%) of the studied children always failed to do homework due to browsing electronic media, felt isolated from their family, felt isolated from society, had negatively effects on behavior with others, felt uncomfortable when the internet was out.

**Table (7):** Regarding social skills, the studied adolescents sometimes have compatibility between all their social skills with a percentage 41.5%, 30.3% always have between all their social skills, with 28.2% never had compatibility between all their social skills. Also, 37.4% of the studied adolescents always have social attributes, 33.5% never had social attributes, and 29.1% sometimes have attributes. Moreover, 50.3% of the studied adolescents always have friendship skills concerning never lying, not talking behind peoples, not speaking rudely.

**Table (8)** reveals that the median time which the studied adolescents went to bed at night was 9.00 p.m., while the median of minutes that children usually take to fall asleep each night was 15 min. The median time which the studied children got out of bed in the morning 9 a.m. The mean of

hours that adolescents', sleeping each night was 8.32 hours.

**Figure (2)** reveals that 55% of studied adolescents had poor sleep quality level, while 45% had good sleep quality level.

**Table (9)** reveals that (22.9%) of the studied adolescents had problems of sleeping three or more times a week because feeling very hot while (42.4%) of them had problems of sleeping once or twice a week due to loud coughing or snoring. And 66.5% of the studied adolescents took prescription or over-the-counter medications that helping in enhancing sleep science more than one month. Two thirds (66.5%) of the studied adolescents had trouble staying awake while driving, while eating meals, or while engaging in social activities.

**Table (10):** There was a statistically negative linear relationship between social functioning and electronic media use with  $r = -.309^*$ ,  $P$  value  $<.001^*$ . There was a statistically negative linear relationship between sleep quality and electronic media use with  $r = -.292$ ,  $P$  value  $<.001^*$ .

#### **4. Discussion:**

Adolescents nowadays are familiar with the use of digital devices and use a variety of electronic media at home, such as

television, smartphones, video players, radio, gaming equipment and computers. Long-term use of electronic media can have various impacts, including physical and psychological health problems such as obesity, cardiovascular disease, social skill and sleep disorders (**Malik et al., 2019**).

The effects of electronic media use may affect adolescents both positively and negatively. The negative impacts are the occurrence of sleep disturbances and social deprivation which are influenced by several factors. Several studies have discussed the relationship between increased screen time intensity and reduced social skills and sleep duration and quality (**Carroll, et al., 2020**).

The results of the present study **table (1)** illustrated that the highest percentage of the studied adolescents were in the age group from 15 to 17 years old and most of them were females. These study results were in an accordance with a study done by **Argiansya et al. (2021)**, who carried out a study about " Electronic Media Use and Sleep Disorders among Adolescents during the COVID-19 Pandemic ", which illuminated that most of the studied adolescent age was  $\geq 16$  years and most of them were female. Also, these study results

were emphasized by **Zein El Dein, (2013)**, who carried out a study about "Harmful Effect of Commonly Used Electronic Devices on Adolescence and its Safeguard at Shebin El-Kom" which illuminated that the mean age of the studied adolescents were (17,6+0569) and had secondary educational level. Also, more than half of them were girls.

On the other wise, hand the results disagreed with a study held by **Simons et al. (2015)**, who carried out a study about "Replacing non-active video gaming by active video gaming to prevent excessive weight gain in adolescents" found that the age of the participants ranged between 9 and 19 years and comprised predominantly male participants. Also, **Gribbon et al. (2015)**, found in his study about "Active video games and energy balance in male adolescents: A randomized crossover trial" there is no significant differences between male and female participants.

Regarding residence, the study results clarified that sixty two percent of the studied adolescents were from urban areas. The results disagreed with a study held by **Ahmed et al. (2019)**, who carried out a study about "Effect of Electronic Media

Abuse on Health Among University Students" who found that sixty five percent of university students live in rural area.

Regarding family members live at home **table (2)**, the present study findings illustrated that, more than two third of the studied adolescents have from 4-5 family member live at home, these results were consistent with a study done by **Zein El Dein, (2013)** which revealed that more than half of the studied children have 5 people lives at home. The study results clarified that less than half of the studied adolescents used screen media with their siblings; these results were disagreed with **Zein El Dein, (2013)** which revealed that more than half of the studied children were watching games alone.

Concerning sites for using electronic media **Figure (1)** the present study findings illustrated that, less than half of the studied adolescents used electronic media in more than one place while one third of them used electronic media at home these results were in some degree of agreement with **Zein El Dein, (2013)** who stated that more than half of the studied children used electronic media in their room while less than one third of them used electronic media outside the house at their friends' houses and cybercafé.

These results could be interpreted in the light of fact that most of the study adolescents used their own smart phones while using electronic media at their houses.

As regards time of using electronic media, nearly half of the studied adolescents used electronic media more than or equal to two hours per day. These results were in correspondence with **Argiansya et al. (2021)**, revealed that more than two thirds of the studied adolescents used electronic media  $\leq 10$  hours. Furthermore, these results were in an agreement with **Ahmed et al. (2019)** who found that, more than one third of the studied adolescents used mobile, internet, Facebook and WhatsApp more than three hours per day. In the same line these results were in correspondence with **Zein El Dein, (2013)** that revealed nearly half of the studied children use computers from four to seven hours. That may be due to most of the study adolescents report consuming electronic media and chats with their friends on most evenings during the last hours before they went to bed. It may took several hours before sleeping.

Regarding circumstances in which the adolescents children resort to the use of electronic media **Table (4)**, the study results

clarified that more than half of the studied adolescents used electronic media when they mentally upset, encounter a specific problem, felt isolated and get kind of frustrated. The study results were in correspondence with **Li et al. (2022)**, who carried out a study about "The Associations of Electronic Media Use with Sleep and Circadian Problems, Social, Emotional and Behavioral Difficulties in Adolescents" stated that more males had conduct problems, peer relationship problems, and social behavior problems, while more females had emotional symptoms, poor mental health and EDS. These results could be interpreted in the light of fact that most adolescents used electronic media as a method for escaping from their own problems.

Regarding the positive effects of electronic media, results of the present study **table (5)**, illustrated that nearly half of the studied adolescents never used electronic media to do homework, browse educational and literary websites, got information on topics that interest while more than half of them sometimes use electronic media for occupy spare time, get information on topics that interest, and allow expressing opinions freely and without restrictions. Also, less

than half of the studied adolescents always use electronic media to connect with friends and family, browse social networking sites such as Facebook, Twitter, YouTube, and others, for watching movies and series.

These study results were emphasized by **Lemola et al. (2014)**, who carried out a study about "Adolescents' Electronic Media Use at Night, Sleep Disturbance and Depressive Symptoms in the Smartphone Age" which illuminated that more than one third of the study children always use electronic media for communication with each other by phone or text message. In the same line the results were in correspondence with **Argiansya et al. (2021)** that revealed that more than half of the electronic media content was no educative programs.

Also, the study results disagreed with a study held by **Chou et al. (2017)**, who carried out a study about "Social skills deficits and their association with Internet addiction and activities in adolescents with attention deficit/hyperactivity disorder" which revealed that most of the studied adolescents use electronic media for online gaming and searching information while more than one third of them used electronic media for online studying and instant

messaging

Regarding the negative effects of electronic media the study results **Table (6)** showed that less than one quarter of the studied children never being harassed or blackmailed by unknown people on the Internet, control the duration of daily use of electronic media, While more than one third of them sometimes control the duration of daily use of electronic media, search for romantic relationships, and use the Internet to access porn sites. Also, nearly two thirds of the studied children always fail to do homework, feel isolated from family and society, have negative effects on behavior with others, feel uncomfortable when the internet is out. These study results were emphasized by **King et al. (2014)**, who carried out a study about "Sleep Interference Effects of Pathological Electronic Media Use during Adolescence" which illuminated that the electronic media has pathological media use on most of the studied children.

Regarding social skills, **Table (7)** less than half of the studied children sometimes had compatibility between all their social skills while nearly one third of them always had compatibility between all their social skills, with more than one quarter never had compatibility between all their social skills.

Also, more than one third of the studied sample always had social attributes. Moreover, more than half of studied children always had friendship skills concerning never lying, not talking behind peoples, not speaking rudely. These study results were emphasized by **Gaspar et al. (2018)**, who investigated "Dimensions of Social and Personal Skills in Children and Adolescents: Age and Gender Differences" showed that most of the participants presented positive values related to their social skills dimensions, subjective wellbeing and social support.

Concerning to sleep pattern **Table (8)**, the median time which the studied adolescents went to bed at night was 9.00 p.m., while the median of minutes that children usually take to fall asleep each night was 15 min. The median time which the studied adolescents got out of bed in the morning 9 a.m.; the mean of hours that adolescents slept each night was 8.32 hours. These results were in some degree of agreement with **Şimşek and Tekgül, sleep (2019)** who investigated "Sleep Quality in Adolescents in Relation to Age and Sleep-related Habitual and Environmental Factors" reported that most of participants had Usual bedtime between 23.00-24.00 p.m. more

than one third had sleep latency of 15 minutes, sleep duration of  $\geq 7$  hours and usual wake up time between 6.00-7.00 a.m.

Regarding correlation between electronic media use, sleep quality and social functioning **Table (10)**, the result of current study revealed that there was a statistically negative linear relationship between social functioning and electronic media use. Also, there was a statistically negative linear relationship between total sleep quality and electronic media use. These study results were emphasized by **Ahmed et al. (2019)**, who investigated that the relatively high percentage of subjects had severed effect on social health; due to the time spent on the devices the youth are refrained from doing some outdoor activities with friends and family. On the same line **Li et al. (2022)**, stated that excessive electronic media use of computers for leisure was associated with an increase in the risk of social behavior problems and increase in the risk of peer relationship problems. Also, insomnia, social jetlag and sleep deprivation associated with Participants with bedtime electronic media use.

However, these results disagreement with **Chou et al. (2017)**, that revealed that the internet creates opportunities to engage

anonymously in many activities without face-to-face social interaction.

## **5. Conclusion:**

There was a statistically negative linear relationship between social functioning, sleep quality and electronic media use with  $r = -.309$ ,  $r = -.292$  P value  $<.001^*$  respectively.

## **6. Recommendations:**

Awareness of adolescents about the potential impacts of electronic media usage on their physical, social and psychological health. Increase awareness of parents and their adolescents to avoid negative effects of electronic media use on sleep quality and social functions through giving educational programs. Further research study for reviewing the effect of education programs for adolescents on reducing negative effect of electronic media use.

## **Conflict of interest:**

Authors declare no conflict of interest.

## **Acknowledgement:**

The researchers appreciate the collaboration of the entire adolescents who agreed to participate in the study.

## RESULTS

**Table (1): Percentage distribution of the studied adolescents according to their demographic characteristics (n=340)**

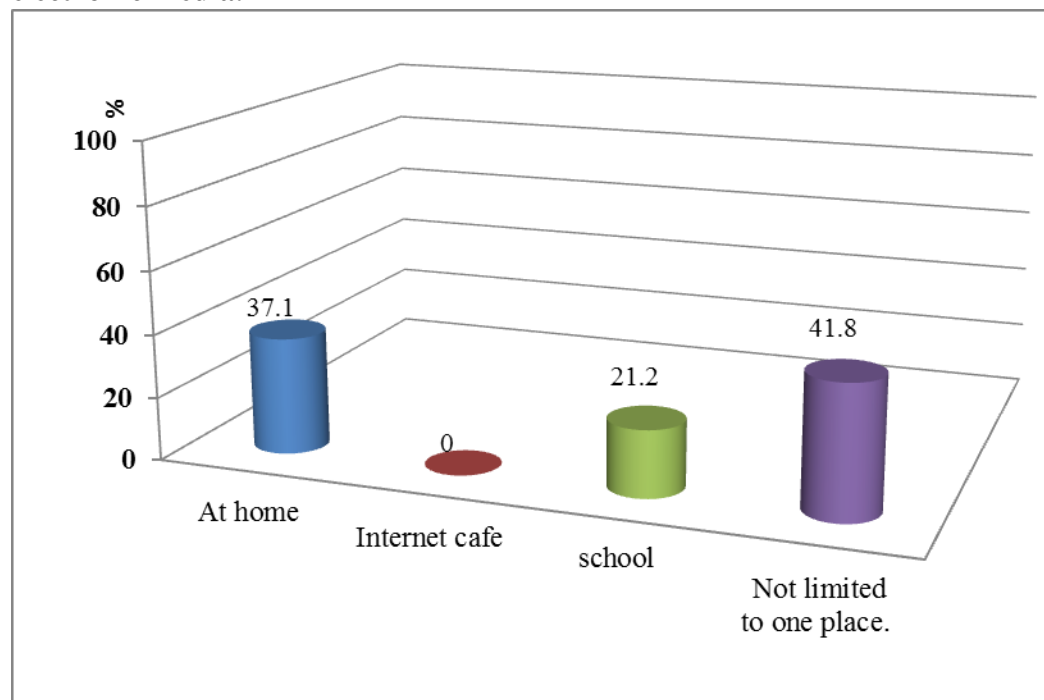
Items	Total Sample (n=340)	
	N	%
<b>Age (Years)</b>		
12:<15	141	41.5
15-17	199	<b>58.5</b>
$\bar{x}\pm SD$ (Range)	14.89 $\pm$ 1.79 (11-18)	
<b>Gender</b>		
Male	134	39.4
Female	206	<b>60.6</b>
<b>Educational level</b>		
Preparatory	130	38.2
Secondary	210	<b>61.8</b>
<b>Residence</b>		
Urban	211	<b>62.1</b>
Rural	129	37.9

**Table (2): Percentage distribution of the studied adolescents according to their profile (n=340)**

Items	Total Sample (n=340)	
	N	%
<b>Numbers of family members live at home</b>		
2-3	30	8.8
4-5	233	<b>68.3</b>
>5	78	22.9

$\bar{x} \pm SD$	4.84 ± 1.04	
Rang	(2-8)	
<b>Responsible member for adolescents at home</b>		
Father	147	43.1
Mother	192	<b>56.3</b>
Stepfather	2	.6
Stepmother	0	0
<b>Usually using screen media with</b>		
Parent	121	35.5
Siblings	142	<b>41.6</b>
Alone	78	22.9

**Figure (1): Distribution of the studied adolescents according to sites for using electronic media.**





**Table (3): percentage distribution of the studied children according to the time of using electronic media (n=340)**

Types of electronic media	Less than 2 hrs.		More than or equal 2 hrs.		Undefined	
	N	%	N	%	N	%
TV or radio	48	14.1	253	<b>74.4</b>	39	11.5
Sites to watch movies and series such as Watch and Watch It	144	42.4	157	<b>46.2</b>	39	11.5
Electronic games	144	42.4	157	<b>46.2</b>	39	11.5
Social media (TikTok, Instagram, Facebook, WhatsApp, Telegram, Twitter).	144	42.4	157	<b>46.2</b>	39	11.5
Computer or laptop.	48	14.1	189	<b>55.6</b>	103	30.3
Mobile phone or iPad	96	28.2	155	<b>45.6</b>	89	26.2

**Table (4): Distribution of the studied adolescents according to their circumstances that resort to the use of electronic media (n=340)**

Studied children's circumstances for using electronic media	Never		Sometimes		Always	
	N	%	N	%	N	%
1. When I feel comfortable	163	<b>47.9</b>	132	38.8	45	13.2
2. When I'm mentally upset	42	12.4	114	33.5	184	<b>54.1</b>
3. When I encounter a specific problem	42	12.4	114	33.5	184	<b>54.1</b>
4. When I feel isolated	42	12.4	114	33.5	184	<b>54.1</b>
5. When I get kind of frustrated	42	12.4	114	33.5	184	<b>54.1</b>

**Table (5): Distribution of the studied adolescents according to the positive effects of electronic media (n=340)**

Statements	Never		Sometimes		Always	
	N	%	N	%	N	%
1. I use electronic media to do my homework	155	<b>45.6</b>	71	20.9	114	33.5
2. Browse educational and literary websites	197	<b>57.9</b>	77	22.6	66	19.4
3. I occupy my spare time	54	15.9	172	<b>50.6</b>	114	33.5
4. Using electronic media broadens my general knowledge	128	37.6	158	46.5	54	15.9
5. Get information on topics that interest me	107	<b>31.5</b>	197	<b>57.9</b>	36	10.6
6. Knowing the opinions of others on various issues in the community in which I live	107	31.5	197	<b>57.9</b>	36	10.6
7. To connect with friends and family	50	14.7	149	43.8	141	<b>41.5</b>
8. Browse entertainment sites	100	29.4	149	43.8	91	26.8
9. I use electronic media to escape from stress and problems that I face	69	20.3	167	49.1	104	30.6

10. To follow the latest news and events	125	36.8	146	42.9	69	20.3
11. It allows me to express my opinions freely and without restrictions	50	14.7	182	<b>53.5</b>	108	31.8
12. Use electronic media to browse social networking sites such as Facebook, Twitter, YouTube, and others	65	19.1	146	42.9	129	<b>37.9</b>
13. Watching movies and series	65	19.1	122	35.9	153	<b>45.0</b>

**Table (6): Distribution of the studied adolescents according to the negative effects of electronic media (n=340)**

Statements	Never		Sometimes		Always	
	N	%	N	%	N	%
1. Loss of time using electronic media	36	10.6	104	30.6	200	58.8
2. Failure to do my homework due to browsing electronic media.	33	9.7	98	28.8	209	<b>61.5</b>
3. My use of electronic media makes me feel isolated from my family.	33	9.7	98	28.8	209	<b>61.5</b>
4. My use of electronic media causes me to feel isolated from society.	33	9.7	98	28.8	209	<b>61.5</b>
5. Electronic media negatively affects my behavior with others.	33	9.7	98	28.8	209	<b>61.5</b>
6. I feel uncomfortable when the internet is out.	33	9.7	98	28.8	209	<b>61.5</b>
7. I am being harassed or blackmailed by unknown people on the Internet.	66	<b>19.4</b>	77	22.6	197	57.9
8. The use of electronic media negatively affects my health.	45	13.2	89	26.2	206	60.6
9. Electronic media at night affects the number of hours of sleep.	50	14.7	84	24.7	206	60.6
10. Imitate some of what I see on electronic media.	72	<b>21.2</b>	113	33.2	155	45.6
11. It is difficult to control the duration of my daily use of electronic media.	57	<b>16.8</b>	128	<b>37.6</b>	155	45.6
12. To search for romantic relationships	57	<b>16.8</b>	128	<b>37.6</b>	155	45.6
13. Use the Internet to access porn sites.	57	<b>16.8</b>	128	<b>37.6</b>	155	45.6

**Table (7): Percentage distribution of studied adolescents according to their social skills (n=340)**

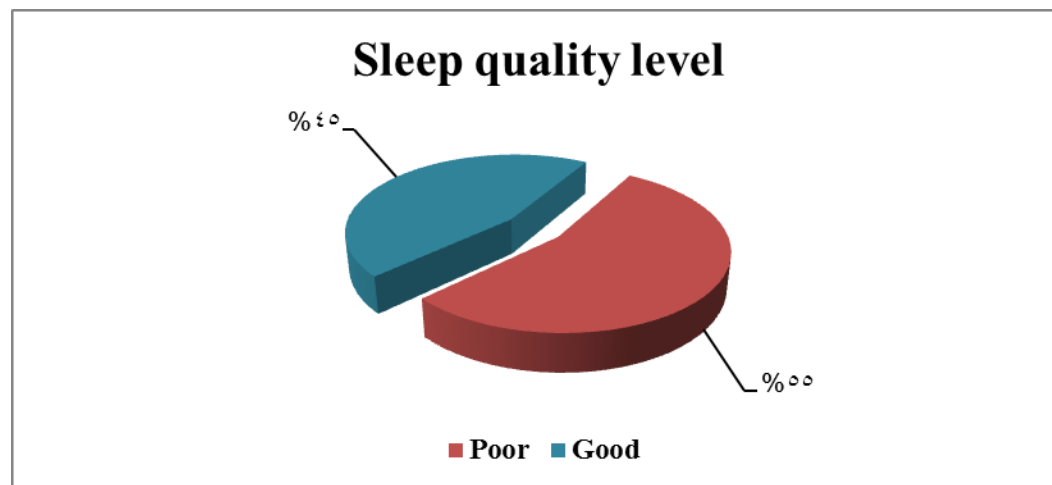
Statements	Never		Sometimes		Always	
	N	%	N	%	N	%
<b>Factor 1: Compatibility between skills</b>						
1. I have friendly relations with everyone	96	28.2	141	41.5	103	30.3
2. Be in contact with everyone	96	28.2	141	41.5	103	30.3

3. I speak well	96	28.2	141	41.5	103	30.3
4. Help others understand their point of view	96	28.2	141	41.5	103	30.3
5. I have good intentions towards others	96	28.2	141	41.5	103	30.3
6. Praise and support my friends	96	28.2	141	41.5	103	30.3
7. Respect everyone	96	28.2	141	41.5	103	30.3
8. I help others while studying	96	28.2	141	41.5	103	30.3
9. Be concerned about other people's feelings	96	28.2	141	41.5	103	30.3
10. I believe in myself	96	28.2	141	41.5	103	30.3
11. I have a stable and non-volatile temperament	96	28.2	141	41.5	103	30.3
<b>Factor 2: Social attributes.</b>						
1. Cheerful	114	33.5	99	29.1	127	37.4
2. friendly	114	33.5	99	29.1	127	37.4
3. Honest	114	33.5	99	29.1	127	37.4
4. Give your best opinion	114	33.5	99	29.1	127	37.4
5. Be interested in peer feelings	114	33.5	99	29.1	127	37.4
<b>Factor 3: Friendship skills</b>						
1. I share everything	129	37.9	99	29.1	112	32.9
2. I don't let anyone feel inferior	99	29.1	109	32.1	132	38.8
3. I don't respect others	78	22.9	160	47.1	102	30.0
4. I never divulge anyone's words in front of others	78	22.9	160	47.1	102	30.0
5. I never lie	63	18.5	106	31.2	171	50.3
6. I don't talk behind people	63	18.5	106	31.2	171	50.3
7. I don't speak rudely	63	18.5	106	31.2	171	50.3

**Table (8): Percentage distribution of the studied adolescents according to their sleep pattern (n=340)**

Items	Total Sample (n=340)	
	N	%
<b>1. During the past month, time to go to bed at night</b>		
Median time	9.0 .m.	
<b>2. During the past month, time by minutes you usually take to fall asleep each night</b>		
Median time (Range)	15 min (5-60) min	
<b>3. During the past month, time you get out of bed in the morning</b>		
Median time (Range)	9 a.m. (5a.m-1 p.m.)	
<b>4. During the last month, no. of hours you sleep each night</b>		
Mean ± SD (Range)	8.32± 2.16 (3-12) hours	
<b>5. Over the past month, your overall sleep quality are</b>		

Very good	42	12.4
Fairly good	81	23.8
Very bad	151	<b>44.4</b>
Somewhat bad	66	19.4



**Figure (2): Percentage distribution of sleep quality level among studied adolescents**

**Table (9): Percentage distribution of the studied adolescents according to their sleep disturbance due to electronic media use (n=340)**

Items	Three or more times a week		Once or twice a week		Less than one a week		Not during the last month	
	N	%	N	%	N	%	N	%
<b>Over the past month, frequency times you had problems sleeping as result of electronic media use</b>								
1. You cannot fall asleep within 30 minutes	63	18.5	96	28.2	69	20.3	112	32.9
2. Waking up in the middle of the night or early in the morning	63	18.5	96	28.2	69	20.3	112	32.9
3. I had to get up to go to the bathroom	33	9.7	126	37.1	69	20.3	112	32.9
4. You cannot breathe comfortably	45	13.2	114	33.5	69	20.3	112	32.9
5. Loud coughing or snoring	15	4.4	144	<b>42.4</b>	69	20.3	112	32.9
6. And feeling very cold	54	15.9	105	30.9	69	20.3	112	32.9
7. Feeling very hot	78	<b>22.9</b>	81	23.8	69	20.3	112	32.9
8. You have bad dreams	39	11.5	120	35.3	69	20.3	112	32.9
9. Feeling pain	57	16.8	102	30.0	69	20.3	112	32.9

<b>Over the past month, frequency times you have taken prescription or over-the-counter medications to help you sleep</b>	27	7.9	27	7.9	60	17.6	226	<b>66.5</b>
<b>During the past month, frequency times you have had trouble staying awake while driving, while eating meals, or while engaging in social activities</b>	27	7.9	27	7.9	60	17.6	226	<b>66.5</b>

**Table (10): Correlation between electronic media use, sleep quality and social functioning (n=340)**

Items		Social Functioning	Sleep Quality
<b>Electronic Media Use</b>	R	-.309*	-.292*
	P- value	<b>&lt;.001</b>	<b>&lt;.001</b>

r is Pearson correlation & P value is significant (two tailed significance)  $\leq .05$ .

## 7. References:

**Ahmed, E., A., M., Farahat, N., H., & Sayed, S.M. (2019).** Effect of Electronic Media Abuse on Health Among University Students. *Egyptian Journal of Health Care*, 10(1), 545-559.

**Ali J.M., (2017):** The Impact of the Internet on Adolescents in Jordan, "Survey Study". Master Thesis, Department of Mass Communication, College of Mass Communication, Middle East University, Amman, Jordan, May-2017.

**Argiansya. F., Soedjadi. R., Indra. R.M., and Kesuma. Y., (2021):** Electronic Media Use and Sleep Disorders among Adolescents during the COVID-19 Pandemic. *Hindawi Sleep Disorders Volume 2021*, Article ID 2096944, 5 pages <https://doi.org/10.1155/2021/2096944>.

**Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ. (1989):** The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Res* (1989) 28:193–213. doi:10.1016/0165-1781(89)90047-4.

**Carpenter JS, Andrykowski MA. (1998):** Psychometric evaluation of the Pittsburgh Sleep Quality Index. *J Psychosom Res* (1998) 45:5–13. doi:10.1016/S0022-3999(97)00298-5.

**Carroll N., Sadowski A., Laila A. et al., (2020):** “The impact of COVID- 19 on health behavior, stress, financial and food security among middle to high income Canadian families with young children,” *Nutrients*, vol. 12, no. 8, p. 2352, 2020.

**Chou, W. J., Huang, M. F., Chang, Y. P., Chen, Y. M., Hu, H. F., & Yen, C. F. (2017).** Social skills deficits and their association with Internet addiction and activities in adolescents with attention-deficit/hyperactivity disorder. *Journal of behavioral addictions*, 6(1), 42–50. <https://doi.org/10.1556/2006.6.2017.005>

**Dawson B, Trapp RG (2004).** Basic and clinical biostatistics. 4th ed. USA: McGraw-Hill.

**Gaspar, T., Cerqueira, A., Branquinho, C., & Matos, M. G. D. (2018).** Dimensions of social and personal skills in children and adolescents: age and gender differences. *International Journal of Development Research*, 18394-18400.

**Gribbon A, McNeil J, Jay O, Tremblay**

**MS, Chaput JP. (2015):** Active video games and energy balance in male adolescents: A randomized crossover trial. *Am J Clin Nutr* 2015; 101:1126-34.

**Hamid, S., Jabeen, A., & Mahmood, Z. (2019).** The development of a social skills scale for adolescents. *Clinical & Counselling Psychology Review*, 1(1), 15–27. DOI: <https://doi.org/10.32350/ccpr.11.02>.

**Hysing M, Pallesen S, Stormark KM, et al. (2015):** Sleep and use of electronic devices in adolescence: results from a large population-based study. *BMJ Open* 2015;5: e006748. doi:10.1136/bmjopen-2014-006748.

**King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2014).** Sleep interference effects of pathological electronic media use during adolescence. *International Journal of Mental Health and Addiction*, 12, 21-35.

**Lemola, S., Perkinson-Gloor, N., Brand, S., Dewald-Kaufmann, J. F., & Grob, A. (2015).** Adolescents' electronic media use at night, sleep disturbance, and depressive symptoms in the smartphone age. *Journal of youth and adolescence*, 44(2), 405–418. <https://doi.org/10.1007/s10964-014-0176-x>

**Li, T. M. H., Chan, N. Y., Li, C. T., Chen, J., Chan, J. W. Y., Liu, Y., Li, S. X., Li, A. M., Zhang, J., & Wing, Y. K. (2022).** The Associations of Electronic Media Use with Sleep and Circadian Problems, Social, Emotional and Behavioral Difficulties in Adolescents. *Frontiers in psychiatry*, *13*, 892583.

<https://doi.org/10.3389/fpsy.2022.892583>

**Malik S. M., Rahmadi F. A., and Wistiani, W. (2020):** “Influence of screen time and sleep duration on obesity in early adolescents,” *Pediatric Indonesian*, vol. 60, no. 3, pp. 154–159, 2020.

**Parida S. R., Khosla P., Pahantasingh S., (2020):** Electronic media, its impact on traditional play and mental health among school-going children in selected schools of Bhubaneswar, Odisha. *European Journal of Molecular & Clinical Medicine*, ISSN 2515-8260, Volume 7, Issue 8, 2020 1463.

**Simons M, Brug J, Chinapaw MJ, de Boer M, Seidell J, de Vet E, et al., (2015):** Replacing non-active video gaming by active video gaming to prevent excessive weight gain in adolescents. *PLoS One* 2015;10: e0126023.

**Şimşek, Y., & Tekgül, N. (2019).** Sleep

quality in adolescents in relation to age and sleep-related habitual and environmental factors. *adolescence*, *2*, 5-7.

**Suleiman KH, Yates BC, Berger AM, Pozehl B, Meza J. (2010):** Translating the Pittsburgh Sleep Quality Index into Arabic. *West J Nurs Res*. 2010 Mar;32(2):250-68. doi: 10.1177/0193945909348230. Epub 2009 Nov 14. PMID: 19915205.

**Van Den Eijnden, R., Koning, I., Doornwaard, S., Van Gorp, F., & Ter Bogt, T. (2018).** The impact of heavy and disordered use of games and social media on adolescents’ psychological, social, and school functioning. *Journal of behavioral addictions*, *7*(3), 697-706.

**Wardenaar, Klaas J.; Wigman, Johanna T.W.; Lin, Ashleigh; Killackey, Eoin; Collip, Dina; Wood, Stephen J.; Ryan, Jaymee; Baksheev, Gennady; Cosgrave, Elizabeth; Nelson, Barnaby; Yung, Alison R. (2013).** Development and Validation of a New Measure of Everyday Adolescent Functioning: The Multidimensional Adolescent Functioning Scale. *Journal of Adolescent Health*, *52*(2), 195–200. doi: <https://doi.org/10.1016/j.jadohealth.2012.06.021>.

**Wang X, Li Y, Fan H. (2019):** The associations between screen time-based sedentary

behavior and depression: a systematic review and meta-analysis. *BMC Public Health.* (2019) 19:1–9. Doi: 10.1186/s12889-019-7904-9.

**Zink J, Belcher BR, Imm K, Leventhal AM. (2020):** The relationship between screen based sedentary behaviors and symptoms of depression and anxiety in

youth: a systematic review of moderating variables. *BMC Public Health.* (2020) 20:1–37. Doi: 10.1186/s12889-020-08572-1.

**Zein El Dein, N. A. (2013).** Harmful effect of commonly used electronic devices on adolescence and its safeguard at Shebin El-Kom. *J. Nurse. Health Sci,* 2(1), 32-46.