

# IMPACT OF VIDEO GAMING ON DEPRESSION IN SCHOOL CHILDREN AND ADOLESCENTS

By

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## ABSTRACT

**Background:** Video games are a pervasive technology to almost all children's and adolescents' life today with clear effect on mental well-being, social interaction and academic work and many other aspects of gamer's health, behaviors and entire life.

**Aim of the work:** This study aimed to study the relation between playing videogames and depressive mood in school aged children and adolescents and to find the prevalence of depression among video gamers aged 8 to 16 years old.

**Participants and methods:** This study was observational analytical study that carried out at primary and preparatory schools in Cairo and Al-Dakahlia Governorates. It was included 500 children and adolescents (270 girls and 230 boys), aged 8-16 years, all of them using videogames frequently during the last six months, collected randomly after parental consent during the period from November 2019 to February 2020.

**Results:** Our study was carried on different socio-economic levels. The majority of the participants were in the medium (40.4%), high (45.8%) social class and only 13.8% of which were in the low class. The majority of participants indicated no obvious hobbies (67.6%), while only 29.8% practiced sports and 2.6% had other hobbies. Most of the participants practiced violent games (57%), while about 47% of which practiced non-violent games. Most of the participants had no depression (55.4%), while 27.8%, 13.2%, 3.6% of them had mild, moderate and severe depression respectively. Depression score was not significantly different between male and female. Days of playing, daily hours and non-violent game type demonstrated high significant correlation with development of depression.

**Conclusion:** Playing videogames was common among school children and adolescents especially in participants who have no hobbies. It seemed to be associated with a higher frequency of depression development. In addition, the degree of depression was demonstrated to be correlated with the period of playing.

**Recommendations:** Further studies are needed in the future which emphasized on whether stoppage of playing videogames will reduce the depression score or not and additional programs must be established to guide the parents about the harmful effects of videogames and how to reduce the period of playing videogames to their children.

**Keywords:** smartphones, gaming disorder, mental health, video gaming and depression.

## INTRODUCTION

A growing proportion of children and adolescents' leisure time is spent with screens including smartphones, tablets, gaming consoles, and televisions<sup>[1,2]</sup>, raising concerns about the effect of screen time on well-being among parents, health professionals, and educators<sup>[3]</sup>. These concerns have prompted physician organizations such as the American Academy of Pediatrics (AAP) to recommend that parents limit children's daily screen time, with specific time limits for preschool children and a general suggestion of limiting time on screens for older children and adolescents<sup>[4]</sup>.

Associations between screen time and poor health outcomes such as obesity and lack of exercise have been well-documented<sup>[5-8]</sup> However, research exploring associations between screen time and more psychological aspects of well-being among children and adolescents has been inconsistent. Some studies find significant associations between screen time and low well-being<sup>[9-11]</sup>, while others find null effects or even benefits with greater screen time<sup>[12,13]</sup>. Thus, some have

suggested that more research is needed before concluding that screen time limits are justified.

Theories and research on psychological well-being support the notion of a broad concept including emotional stability, positive interpersonal relationships, self-control, and indicators of flourishing<sup>[14]</sup> as well as absence of mood disorders such as anxiety or depression<sup>[15]</sup>. Low emotional stability, disrupted relationships, and low self-control have all been implicated in greater morbidity and mortality<sup>[16,17]</sup>, and mental health issues such as mood disorders are a significant risk factor for morbidity and mortality, including non-suicidal self-harm behaviors, suicide attempts, and completed suicides<sup>[18]</sup>.

In terms of prevention, establishing possible causes and outcomes of low psychological well-being is especially important for child and adolescent populations. Half of mental health problems develop by adolescence<sup>[19]</sup>. Thus, there is an acute need to identify factors linked to mental health issues that are amenable to intervention in this population, as most antecedents (e.g., genetic predisposition, trauma, and

poverty) are difficult or impossible to influence. Compared to these more intractable antecedents of mental health, how children and adolescents spend their leisure time is more amenable to change.

This work was designed to study the relation between playing videogames and depressive mood in school children and adolescents and to find the prevalence of depression among video gamers aged 8 to 16 years old children.

#### **Ethical considerations:**

- Approval of ethical committee in the department and university was obtained before the study.
- Approval of Central Agency for Public Mobilization and Statistics and approval of Directorate of Education was obtained before the study.
- An informed written consent had been obtained from the parents of participants before getting them involved in the study.
- The steps of the study, the aim the potential benefits and hazards all had been discussed with the parents.
- The parents of the participants had the right to withdraw from the study at any time.

- Confidentiality of all data had been ensured.
- There is no conflict of interest regarding the study and publication.
- The author declared that there is no financial support regarding the study and publication.

#### **PATIENTS AND MATERIALS**

##### **Participants:**

This observational analytical study was carried out at primary and preparatory schools in Cairo Governorates (Qassem Amin Preparatory School for girls, Akhnaton Egyptian School) and Al-Dakahlia Governorates (Al-Safwah school-, Al-Shahid Mohammed Gamal, Shagert Al-Dorr School). and it was included 500 school students (270 girls and 230 boys), all of them using videogames frequently during the last six months, collected randomly after parental consent during the period from November 2019 to February 2020.

##### **Inclusion criteria:**

- School children and adolescents aged 8-16 years.
- School children and adolescents using video games frequently during last 6 months.

**Exclusion criteria:**

- School children aged less than 8 or adolescents aged more than 16 year.
- School children and adolescents with known neurological or psychiatric disorders.
- School children and adolescents not using video games.

**Methods:**

Our study participants were subjected to:

1. Medical history and clinical examination to detect any medical condition, medications and chronic diseases.
2. Psychiatric assessment was conducted by trained qualified person to detect mental disorders, medications and social problems.
3. Detailed Socioeconomic history using **Fahmy et al. score (2015)**<sup>[21]</sup>. Total score is 48 depending on description of parental income, education, occupation, family size, number of person per room, housing sanitation and computer use. The High status is from (33-48), medium is from (19 to <33), low is (<19).
4. Assessment of videogames playing: A predesigned self-

report questionnaire was used to assess students' pattern of gaming during the last 6 months, how many days per week and time spent per day. Participating students were allowed to write a brief paragraph about their favorite games, other hobbies, how to spend their time, and their relationship with father, mother, and family members. Genre and content of video games were classified according to Entertainment Software Rating Board (ESRB)<sup>[20]</sup> which is an American self-regulatory organization that assigns age and content ratings to consumer video games.

5. Assessment of depression and its severity: Using **Abd El Fatah Questionnaire, (1988)**<sup>[22]</sup>, which is modified and translated to an Arabic form of **Beck Depression Inventory, (1974)**<sup>[23]</sup> and **Kovacs, (1983)**<sup>[24]</sup>. The questionnaire consists of 27 groups of statements. Each group has 3 statements, and the child is asked the one most suitable for him (regarding his feeling, experiences and thoughts). Each one of the 3 statements is given a score (0, 1, 2) the highest score is 54 degrees. No depression if the

score between (0-14), mild depression if (15-21), moderate if (22-27) and (>27) indicates severe depression.

**Statistical analysis:**

IBM’s SPSS statistics (Statistical Package for the Social Sciences) for windows (**version 25, 2017**) was used for statistical analysis of the collected data.

Shapiro-Wilk test was used to check the normality of the data distribution. All tests were conducted with 95% confidence interval. P (probability) value < 0.05 was considered statistically significant. Charts were generated using SPSS’ chart builder and Microsoft Excel for windows 2019.

**RESULTS**

**Table (1): Demographic characteristics of the included participants**

All participants (n= 500)		Mean & SD	Median	Range	IQR
Age (years)		13.10 ± 1.758	13.00	11, 16	12.00, 14.00
Gender	Male	46% (230)			
	Female	54.0% (270)			
Social levels	Low	13.8% (69)			
	Medium	40.4% (202)			
	High	45.8% (229)			
Hobbies	None	67.6% (338)			
	Sport	29.8% (149)			
	Other	2.6% (13)			
Data is expressed as mean and standard deviation, median, range and inter-quartile range or as percentage and frequency.					

This table shows that the most of the included participants were

from medium and high social levels with no hobbies (**Table 1**).

**Table (2): Gaming profile of the study participants**

All participants (n= 500)		Mean & SD	Median	Range	IQR
Days of playing		4.47 ± 2.340	5.00	1, 7	2.00, 7.00
Daily hours		3.50 ± 1.989	3.00	1, 10	2.00, 5.00
Game type	Violent	57.0% (285)			
	Not violent	43.0% (215)			
Score of depression		15.16 ± 7.751	14.00	0, 49	10.00, 20.00
Depression level	None	55.4% (277)			
	Mild	27.8% (139)			
	Moderate	13.2% (66)			
	Severe	3.6% (18)			
Data is expressed as mean and standard deviation, median, range and inter-quartile range or as percentage and frequency.					

This table shows that the average days of playing was  $4.47 \pm$  SD 2.340, the average daily hours were  $3.50 \pm 1.989$ , more than half of the included participants (57%) had played violent games. The average depression score was  $15.16 \pm 7.751$  but most of the

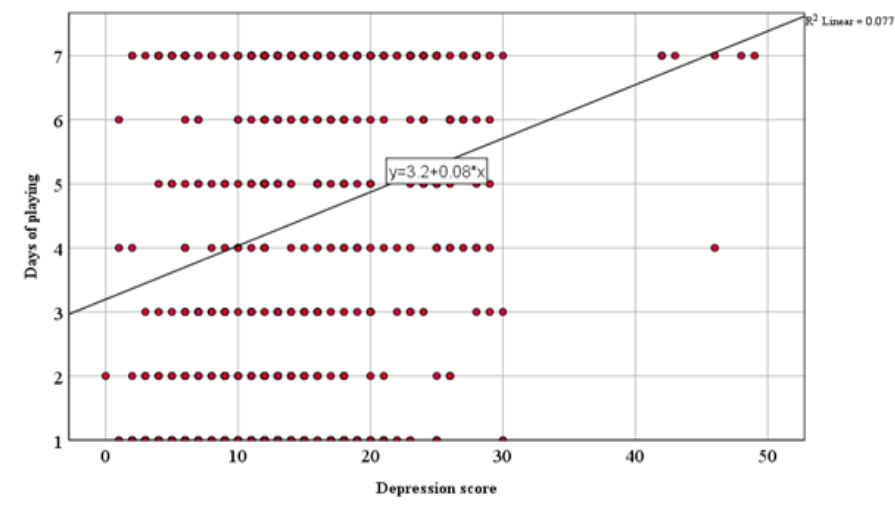
participants in this study were not depressed (55.4%) and the majority of depressed subjects showed mild depression symptoms nearly 28%, while only 3.6% showed severe depression and 13.2% showed moderate depression.

**Table (3): Correlation between depression score and other studied variables in the current study**

All patients (n= 500)	Correlation coefficient	p
Age	-0.024	0.590
Male Gender	0.069	0.123
Social class	0.015	0.730
Hobbies	0.041	0.356
Days of playing	<b>0.277</b>	<b>&lt; 0.001</b>
Daily hours	<b>0.238</b>	<b>&lt; 0.001</b>
Not violent Game type	<b>0.133</b>	<b>&lt; 0.001</b>
<b>P is significant when &lt; 0.05.</b>		

This table shows that there was no statistically significant relation between age, gender, social classes, presence of hobbies and developing depression symptoms. In other side, days of playing, time spent

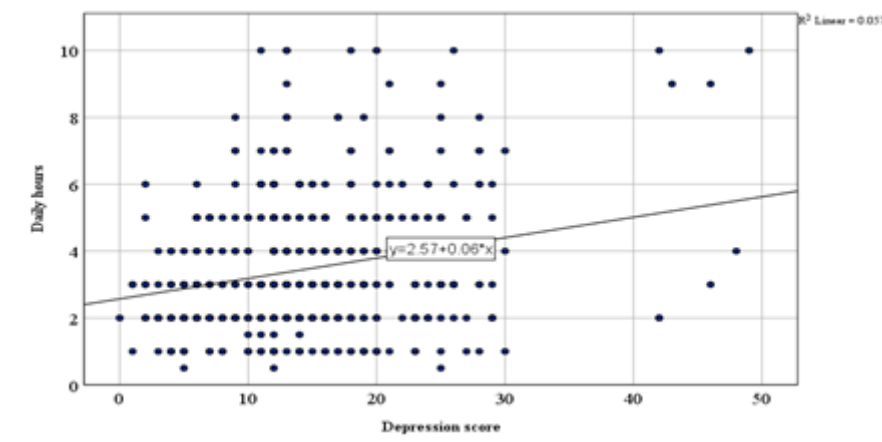
on video games in every session and playing non-violent game type shows statistically significant association with developing depression symptoms ( $P < 0.001$ ).



**Figure (1): Correlation between depression score and days of playing in the current study**

This figure shows that there was a positive significant correlation between days of

video games playing and development of depression.



**Figure (2): Correlation between depression score and daily hours in the current study**

This figure shows that there was a positive significant correlation between daily hours

of video games playing and development of depression.

**Table (4): Correlation between depression score and gender distribution in the current study**

		Males (n= 230)	Females (n= 270)	p
<b>Days of playing</b>		4.95 ± 2.259	4.05 ± 2.332	< <b>0.001</b>
<b>Daily hours</b>		3.25 ± 1.786	3.71 ± 2.128	<b>0.009</b>
<b>Score</b>		14.66 ± 7.604	15.73 ± 7.896	0.123
<b>Depression</b>	<b>None</b>	55.2% (127)	55.6% (150)	0.439
	<b>Mild</b>	29.1% (67)	26.7% (72)	
	<b>Moderate</b>	13.5% (31)	13.0% (35)	
	<b>Severe</b>	2.2% (5)	4.8% (13)	
<b>P is significant when &lt; 0.05.</b>				

This table shows that there was statistically significant difference between male and female regarding playing days and playing hours ( $P < 0.05$ ). Male plays more days than

female, but female spent more hours per playing session. There was no statistically significant difference between boys and girls regarding the score and degree of depression ( $P > 0.05$ ).

**Table (5): comparison of depression score and grade according to game type in the current study**

		Violent (n= 285)	Nonviolent (n= 215)	p
<b>Score of depression</b>		14.26 ± 7.759	16.34 ± 7.596	<b>0.003</b>
<b>Depression level</b>	<b>None</b>	61.1% (174)	47.9% (103)	<b>0.023</b>
	<b>Mild</b>	24.9% (71)	31.6% (68)	
	<b>Moderate</b>	11.6% (33)	15.3% (33)	
	<b>Severe</b>	2.5% (7)	5.1% (11)	
<b>P is significant when &lt; 0.05.</b>				

This table shows that there was statistically significant

correlation between depression and type of video games.

## **DISCUSSION**

Video games are a pervasive technology to almost all children's and adolescents' lives today with clear effect on mental well-being, social interaction and academic work and many other aspects of gamer's health, behaviors and

entire life<sup>[9-11]</sup>. This work was done to study the association of video games playing and depression symptoms in school children and adolescents, which nearly all of them are exposing to different types of video games.



In our study only 32.4% of children showed interest in hobbies 29.8% of them for sport hobbies. Our study was conducted on random collected samples of five hundred children and adolescents between eight and sixteen years old, in schools of Cairo and Al-Mansura city, 230 boys (46%) and 270 girls (54%) because female students are more committed to school attendance than male. We chose the participants from different socio-economic levels from High to low; the results show that 45.8% (229 students) are from high socio-economic level, 40.4% (202 students) from medium, 13.8% (69 students) from low socio-economic level depending on **Fahmy et al. score (2015)**<sup>[21]</sup>. This explained by more committed to school attendance in private schools than public schools and in high and medium levels than low. All our participants are video gamers in the last 6 months, with daily playing time ranging from (1 to 10 hours) with mean value (3.5 ±1.989 hours) and (4.47 ±2.340 days per week). Among five hundred students, 223 of them (44.6%) showed different level of depression as 127 student showed mild depression (27.8%), 66 students expressed moderate depression (13.2%) only 18 students showed severe depression

according to Child Depression Inventory (CDI) by **Abd El Fatah, (1988)**<sup>[22]</sup>.

The prevalence of depression in our study is much higher than that reported in national and regional survey in Egypt<sup>[25],[26]</sup> and other countries<sup>[27],[28],[28]</sup>. However, this high prevalence is consistent with other studies which showed a high prevalence of these disorders among adolescent age group<sup>[30],[31],[32]</sup>. An explanation of this high rate may be the use of a self-reported questionnaire as it may lead to a higher prevalence rate than other methods of assessment<sup>[33]</sup>, that is because it depends on symptoms rather than psychiatric diagnosis<sup>[34]</sup>.

The present study showed statistically significant correlation between time consumed in videogames playing and depression, P value < .001. This finding could be explained by two directions, one of them is that individuals with poor psychological functioning, playing video games excessively because games allow them to avoid their everyday problems and instead immerse them in another environment according to French study of **Taquet et al., (2017)**<sup>[35]</sup>. On the other hand, potentially problematic video game use may also lead to psychological problems because it reduces the

amount of time and the number of opportunities gamers have to practice real-life behavior<sup>[36]</sup>.

Also, **Wang et al., (2018)**<sup>[37]</sup> in his study done on Korean adolescents concluded that Depression was a common comorbidity of internet gaming disorder. **Brunborg et al., (2013)**<sup>[38]</sup> distinguished high spent time on video games from gaming addiction. And they found gaming addicts had greater risk of depression symptoms, while highly engaged did not.

Our study going against **Valadez and Ferguson, (2012)**<sup>[39]</sup> in their study on 100 participants in USA and found that time spent playing a video game had not any effect on depression.

In our study and regarding to time consumed in playing videogames, all participants in non-depressed group (277 student 55.4%) state that, they are playing limited time, and only after completion their homework and study, never in the beginning of day and many of them playing only in weekend.

In depressed group all moderate and severe depressed gamers are playing more than 4 hours most days of week and they think that playing videogames such amount of time had significant effects on their mood.

Most of the parents in that sample appeared to be business travelers, or very busy in their jobs and had limited contact with their children. We suspected that, family misconnection may be a predisposing factor for depression in children and adolescents.

The current study also showed a statistically significant correlation between non-violent games and depression, so participants that playing violent games showed less depression. **Klasen et al., (2020)**<sup>[40]</sup> investigate the selective responses of reward system in the brain to violent and non-violent games and revealed a differential involvement of the striatal reward system: non-violent success elicited activation of the ventral striatum-which more linked with addiction-, whereas violent games success activated specifically the dorsal striatum. **Klasen et al., (2020)** study may support our result because nonviolent games accordingly more addictive and linked to pathological gaming and depression more than violent games.

Also, **Park et al., (2016)**<sup>[41]</sup> found that people's preferred game genres (e.g., strategy, action) expressed different psychological functioning but they showed that Role playing games (violent game) associated with low

psychological functioning. **Fleming and Rick Wood, (2001)**<sup>[42]</sup> found that the violent video games significantly related to positive mood.

The study of **Gentile et al., (2016)**<sup>[43]</sup> examined neural recruitment during violent and non-violent videogame play, while the participators undergoing functional MRI scanning. Non-violent gamers had an increase in emotional response regions; violent gamers demonstrated an active suppression of these same regions.

This result could also be explained by the fact that violent video games are more prevalent and most competitive; this is what makes them a contribution, perhaps to more social interactions and more positive effects on mood.

Our study also showed statistically insignificant correlation between age, gender, social levels and presence of hobbies and a score of depression.

We are in consistent with national survey of mental health in **Egypt, (2017)**<sup>[24]</sup>. Which revealed that the relationship between demographic variables and mental health were not clear. This result was different from previous epidemiological study which consistently revealed correlation

between depression and sociodemographic variables<sup>[44]</sup>.

Our results were close to numbers of **Entertainment Software and Entertainment Software association, (2014)**<sup>[45]</sup> which revealed that the violent games preferred by 65.4% of US users while 34.6% preferred non-violent games.

We noticed that the number of depressed females slightly more than number of male participants with statistically insignificant difference. And we noticed also that the severe depressive symptoms are more in female participants, but with statistically insignificant difference.

## **CONCLUSION**

Playing videogames was common among school children and adolescents especially in cases having no hobbies. It seemed to be associated with a higher frequency of depression development. In addition, the degree of depression was demonstrated to be positively correlated with the period of playing.

## **LIMITATIONS**

The reversibility of such depression in cases that stopped playing videogames was not involved in our study.

## RECOMMENDATIONS

Further studies are needed in the future which emphasized on weather stoppage of playing videogames will reduce the depression score or not and additional programs must be established to guide the parents about the harmful effects of videogames and how to reduce the period of playing videogames to their children.

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## الملخص العربي

تنتشر ألعاب الفيديو على نطاق واسع اليوم بين أطفال المدارس والمراهقين في جميع أنحاء العالم. وقد أظهرت العديد من الدراسات أن استخدام ألعاب الفيديو يرتبط بمجموعة من المشاكل المختلفة.

أظهرت الدراسات السابقة على سبيل المثال أن مقدار الوقت المستغرق في ألعاب الفيديو يرتبط بمستوى أعلى من الاكتئاب، وانخفاض التحصيل الأكاديمي، والمزيد من استهلاك الكحول ومشاكل السلوك. ولهذا فإن كمية الوقت المستهلك في استخدام ألعاب الفيديو قد تكون تنبؤية بالنتائج السلبية. ومع ذلك فإن بعض الدراسات قد وجدت أن الوقت الذي يُقضى على ألعاب الفيديو لا يرتبط بالنتائج السلبية. وهذا يشير إلى أن مدة اللعب في حد ذاتها ليست بالضرورة مرتبطة بالتأثيرات الضارة.

هناك اتفاق أكبر على أن المشكلات المرتبطة بألعاب الفيديو ربما تكون مرتبطة بتأثيرات سلبية أخرى. على سبيل المثال، أظهرت الأبحاث أن إدمان ألعاب الفيديو مرتبط بالاكتئاب. على الرغم من عدد كبير من الدراسات التي تركز على إدمان ألعاب الفيديو، لا يزال هناك عدم توافق في الآراء بشأن شروط الاستخدام وكيفية تعريف هذه الظاهرة والطرق التي ستستخدم لقياسها. استنادًا إلى استعراض ومراجعة الأبحاث السابقة، اقترح كنج، وآخرون أن السمات الأساسية لإدمان ألعاب الفيديو هي أعراض انسحاب تحدث عند عدم القدرة على لعب ألعاب الفيديو وفقدان السيطرة على مقدار الوقت المستغرق في ألعاب الفيديو، والاضطراب من حيث العلاقات الشخصية والتزامات المدرسة/ العمل الناشئة عن ألعاب الفيديو. لا يُعترف بالإدمان على ألعاب الفيديو على أنه تشخيص نفسي رسمي، ولكنه مدرج كشرط لإجراء مزيد من



الدراسة في النسخة الخامسة المنشورة حديثاً من الدليل التشخيصي والإحصائي للاضطرابات العقلية (الجمعية الأمريكية للطب النفسي، 2013) في الجدل الدائر حول الكيفية التي يجب أن يتم بها تصور إدمان ألعاب الفيديو، تم اقتراح أن يكون التفاعل العالي والحماس الزائد لألعاب الفيديو مميزاً عن الإدمان عليها، إذ أن إمكانية حدوث التأثير السلبي من الوقت المستغرق في الألعاب ربما يعتمد على عوامل فردية وسياقية، لذلك بدأ الباحثون في التمييز بين الحماس لألعاب الفيديو والمشاكل المرتبطة بالألعاب، حيث تشير الأدلة الناشئة إلى أن إدمان ألعاب الفيديو مرتبط بعواقب سلبية، إلا أن المشاركة العالية في الألعاب ليست كذلك.

**الهدف من الدراسة:** في الدراسة الحالية، سنحقق في العلاقات بين مقدار الوقت الذي يتم قضاؤه على ألعاب الفيديو والاكتئاب بين خمسمئة من أطفال المدارس والمراهقين.

**طريقة البحث:** شملت دراستنا التحليل بأثر رجعي في مقطع عرضي من خمسمئة من أطفال المدارس والمراهقين، يستخدمون ألعاب الفيديو، والذين تم جمعهم بشكل عشوائي بعد موافقة الوالدين على الاشتراك في البحث.

من أجل إثبات تطور الاكتئاب وخطورته تم استخدام استبيان (CDI) عبد الفتاح، 1988، المستخدم في تشخيص الاكتئاب عند الأطفال والذي تم اشتقاقه من "Beck Depressin Inventory" للبالغين وتم إعداده بواسطة (Maria Kovacs 1982). ثم ترجم إلى اللغة العربية وأعد ليناسب الاستخدام وفق الثقافة المصرية، ويتكون الاستبيان من 27 مجموعة من البيانات. كل مجموعة لديها 3 بيانات وطلب من الطفل اختيار العبارة المناسبة له فيما يتعلق بشعوره، وخبراته وأفكاره. كل واحدة من العبارات الثلاثة تأخذ درجة (صفر، 1، 2) وأعلى درجة هي 54 درجة. تم تحويل الدرجة الخام التي

يحصل عليها الطفل إلى درجة مكافئة وفقا للجدول المصممة تبعا لسن الطفل وجنسه. ووفقا للجدول فإن درجة الاكتئاب هي (49) و تتراوح أعمار هذا الاختبار بين سن سبع سنوات ونصف وحتى ست عشرة سنة ونصف.

### معايير الإدراج:

1. الأطفال في العمر من 8-16 سنة.
2. أن يكون من مستخدمي ألعاب الفيديو.

### معايير الاستبعاد:

1. الأعمار أقل 8 أو أكثر من 16 سنة.
2. الأطفال المصابون بأمراض عصبية أو نفسية .
3. الأطفال الذين لا يستخدمون ألعاب الفيديو.

### كشفت الدراسة الحالية ما يلي:

- كان متوسط عمر الحالات المدروسة  $13.10 \pm 1.758$  مع نسبة ذكر للإناث (ذكور/ إناث) 54/46.
- غالبية الحالات المدروسة كانت في الطبقة الاجتماعية المتوسطة (40.4%) أو العالية (45.8%) مع 13.8% فقط في الطبقة الدنيا.
- معظم الحالات لم يكن لديهم هوايات (67.6%) بينما 29.8% فقط يمارسون الرياضة و 2.6% لديهم هوايات أخرى.
- متوسط عدد أيام اللعب بين الحالات المدروسة  $4.47 \pm 2.340$  مع ساعات يومية  $3.50 \pm 1.989$ .

- معظم الحالات مارست الألعاب العنيفة (57%)، بينما مارست حوالي 47% منها الألعاب اللاعنيفة.
- معظم الحالات لم يكن لديها اكتئاب (55.4%)، بينما 27.8%، 13.2%، 3.6% منهم يعانون من اكتئاب خفيف ومتوسط وشديد على التوالي.
- متوسط درجة الاكتئاب بين الحالات المصابة بالاكتئاب كان  $15.16 \pm 7.751$ .
- أظهرت أيام اللعب والساعات اليومية ونوع الألعاب اللاعنيفة ارتباطاً معنوياً بدرجات الاكتئاب، بينما لا يوجد ارتباط بين العمر والجنس والطبقة الاجتماعية والهوايات.
- اختلفت أيام اللعب والساعات اليومية بشكل كبير بين الذكور والإناث حيث لعب الذكور أياماً أكثر من الإناث، بينما تقضي الإناث ساعات أكثر في كل جلسة لعب.
- لم تكن درجات الاكتئاب تختلف بشكل كبير بين الذكور والإناث.
- لم تظهر الطبقة الاجتماعية أي ارتباط معنوي مع درجة الاكتئاب ودرجته وكذلك أيام وساعات اللعب.
- أظهرت نتيجة الاكتئاب زيادة كبيرة بين الألعاب غير العنيفة مقارنة بالألعاب العنيفة.

**الاستنتاج:** نستنتج من الدراسة أن لعب ألعاب الفيديو أضحى أمراً شائعاً بين أطفال المدارس والمراهقين خاصة في حالات عدم ممارسة الهوايات. ويبدو

أنه مرتبط بارتفاع معدلات ظهور الأعراض الاكتئابية. بالإضافة إلى ذلك فإنه قد تم إثبات ارتباط درجة الاكتئاب بفترة اللعب حيث أن فترات اللعب الطويلة ترتبط احصائياً بزيادة معدلات الاكتئاب وزيادة شدتها كذلك.

### **التوصيات:**

1. هناك حاجة إلى مزيد من الدراسات في المستقبل والتي توضح ما إذا كان التوقف عن الطقوس السيئة في لعب ألعاب الفيديو سيقبل من درجة الاكتئاب أم لا.
2. توصي الدراسة بضرورة إنشاء برامج لإرشاد الوالدين وتوعيتهم حول الآثار الضارة لألعاب الفيديو وضرورة التحكم و تقليل فترات لعب ألعاب الفيديو لأطفالهم.
3. توصي الدراسة بضرورة إنشاء برامج أخرى لتشجيع الأطفال على ممارسة الهوايات المختلفة والتي نعتقد أن الحضور الطاعي لألعاب الفيديو قد همش من أهميتها لدى الأطفال والمراهقين.