

Video Games and Aggression Among Primary School Children in Baghdad, Al-Rasafa, 2023

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ABSTRACT

Introduction: Video gaming is a widespread leisure activity among children. Its impact on children's development, socialisation, and education has garnered significant attention. One of the causes of increased aggressive behaviour and juvenile crimes in many countries (developed and developing) is linked to playing video games.

Objective: To measure the prevalence of video game playing and aggression among primary school children in Baghdad, and to identify associated factors.

Methods: A cross-sectional study was conducted among 500 students from 10 primary schools in Baghdad/Al-Rasafa during 2023. A multistage random sampling technique was used. Data were collected using a structured questionnaire covering sociodemographic variables, gaming habits, social context, parental monitoring, and aggression. Aggression was measured using the Modified Overt Aggression Scale. Data were analysed with SPSS version 26 using descriptive statistics and appropriate inferential tests; $p \leq 0.05$ was considered significant.

Results: The sample included 46.4% males and 53.6% females, aged 6–13 years. Overall, 83% of children reported playing video games, with males (89.3%) more likely than females (77.7%). Most gamers (82.6%) used mobile phones, and 65.8% played with others. Moderate-to-severe aggression was observed in 19.8% of players compared with 7.1% of non-players. Verbal and physical aggression were significantly associated with gaming ($p = 0.0001$). Parental monitoring of both time and content of video games was also significantly associated with lower aggression levels ($p = 0.00002$ and $p = 0.0000001$, respectively).

Conclusion: Video gaming is highly prevalent among primary school children in Baghdad and is associated with increased aggression, particularly verbal and physical types. Parental monitoring plays a protective role. Public awareness campaigns and parental guidance are recommended to mitigate potential risks.

Key words: Video games; Aggression; Primary school children; Parental monitoring; Baghdad.

INTRODUCTION

Technological advances over the past few decades have significantly increased screen use among children for leisure and education. Video games, in particular, have become one of the most popular pastimes globally. Although gaming may provide entertainment and cognitive stimulation, concerns have been raised regarding its potential negative effects on children's behaviour and mental health.^[1]

Several studies have linked exposure to violent video games with increased aggression, reduced prosocial behaviour, and desensitisation to violence. Short-term effects include heightened arousal and imitation of aggressive behaviours, while long-term exposure may shape aggressive cognitions and attitudes, potentially persisting into adulthood.^[2] A meta-analysis involving more than 17,000 participants found that violent video game play was associated with higher levels of physical

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aggression over time.^[3]

In many countries, juvenile delinquency and violent behaviours have been partially attributed to gaming, particularly when the content is violent and parental monitoring is limited. Locally, a study in Baghdad (2015) found that more than 80% of school children played video games, with over one-third exhibiting aggressive behaviour. The insecurity and limited outdoor opportunities in Iraq, combined with the increasing availability of mobile phones, have made gaming a common leisure activity for children. However, local research on the relationship between gaming and aggression remains scarce.^[4,5]

Understanding this association is crucial for public health, especially in contexts where children are already vulnerable due to social instability, conflict, and limited recreational alternatives.^[6] This study was therefore conducted to assess the prevalence of video gaming and aggression among primary school children in Baghdad, and to explore the sociodemographic and behavioural factors associated with aggression among gamers.

METHODS

Setting and Study Design: A cross-sectional study was conducted in Baghdad/Al-Rasafa during 2023. Ten primary schools were selected, and data collection was carried out over 5 months.

Ethical Considerations: The Ethical Committees of the Arab Council for Health Specialisation in Iraq, Community Medicine, and the Ministry of Health approved the research protocol for this study. Written agreements were obtained from the administrators of the schools enrolled in this study. Administrative communication was conducted with the Baghdad health directorates and the Ministry of Education, as well as its education directorates in Baghdad, to obtain their permission for the fieldwork. Written informed consent was obtained from parents and was kept in a secure place. Confidentiality and anonymity were maintained throughout the study.

Definition of the case, inclusion and exclusion criteria:

The study population included primary school children aged 6–13 years enrolled in the selected schools. All students who were present during the study period and whose parents provided consent were included. Children with chronic physical or mental illness that could affect behaviour, or those whose parents did not consent, were excluded.

Sampling and sample size:

A: Sample size: The estimated sample size required for this study was obtained by using the standard equation for the calculation of sample size of cross-sectional studies.⁽⁷⁾

$$n = (z^2pq)/d^2$$

Where: n = sample size, z = the standard deviation at a confidence level 95% which is 1.96, P = the prevalence of playing video games which was assumed to be 50%, as no study has been published dealing with video games and aggression among primary school children in Iraq at the time of this study, $q = 1 - p$, d = the margin of error and it is 5%. So, the calculated sample size according to that equation is not less than 385. 15% of the calculated sample size was added to account for non-respondents, resulting in a final sample size of 443, rounded to 500.

B- Sampling technique: A multistage random sampling method was employed to select students from primary schools in Baghdad city, aiming to be as representative as possible in terms of geographic diversity and related socio-economic factors. Baghdad is divided by the river Tigris into Al-Karkh and Al-Rasafa. The Al-Rasafa side of Baghdad was selected by simple random sampling, which was then divided into three educational directorates: Al-Rasafa The First, Al-Rasafa The Second, and Al-Rasafa The Third. Simple random sampling was conducted, and Al-Rasafa The Second was chosen, which in turn has 2 districts: Al-Rasafa (3 sub-districts) and Al-Mada'in (3 sub-districts). From each district, one sub-district was selected by simple random sampling, with 5 primary schools out of 27 schools in Al-Rasafa and 5 primary schools out of 29 schools in Al-Mada'in district Centre. One classroom from each grade in each school

Table 1 | Distribution of sociodemographic variables (n=500)

Sociodemographic variables		No.	%
Child's age (years)	(Mean±SD) 9.2±2		
	6	47	9.4
	7	76	15.2
	8	77	15.4
	9	68	13.6
	10	77	15.4
	11	71	14.2
	12-13	84	16.8
Sex of child	Males	232	46.4
	Females	268	53.6
Caretaker	Parent	490	98.0
	Step-parent	6	1.2
	Grandparent	4	0.8
Mother's age	(Mean±SD) 35.77±6.41		
	<30 years	92	18.4
	30---49	398	79.6
	≥50	10	2.0
Father's age	(Mean±SD) 42.05±7.80		
	<30years	8	1.6
	30-49	404	80.8
	≥50	88	17.6
Marital status	Married	461	92.2
	Divorced	28	5.6
	Widowed	11	2.2
Mother's education	Illiterate	9	1.8
	≤ Secondary	259	52
	> Secondary	232	46.2
Father's education	Illiterate	11	2.2
	≤ Secondary	235	47
	> Secondary	254	50.8
Deceased "Father"	Yes	11	2.2
	No	489	97.8
Mother's working status	Working	153	30.6
	Not	347	69.4
Father's working status	Working	443	90.6
(n=489)	Not	46	9.4
Number of children	1	34	6.8
	2	162	32.4
	3+	304	60.8
Rank of child	1	212	42.4
	2+	288	57.6
Socio-economic Status	Low	23	4.6
	Middle	237	47.4
	High	240	48.0

was randomly selected. All students sitting in the middle line in the selected classrooms who met the inclusion criteria were enrolled in the study by simple random sampling.

Data Collection tools: A validated questionnaire was selected based on a published study that was reviewed by many experts.[8] An expert committee translated the questionnaire into Arabic to maintain consistency and validity. The questionnaire consisted of four sections: a demographic section (parents reported on demographic information related to themselves and the target child (who defined as the child in the family who attend the chosen primary school), such as parents and child's age, gender, level of education of the parents, their jobs, marital status, number of children in the family with the rank of the child and the caretaker 'the target child is living with parents, grandparents or step parents'), questions about video game playing (where the player is defined as any child plays video games during the week regardless the time of playing, type and content of media, social context, time spent on video games and other activities), parental control (regarding monitoring time and content of video gaming),^[8] and measurement of aggression by using The Modified Overt Aggression Scale (a four-part behavioral rating tool that designed to measure four sorts of aggressive behavior whether verbal, aggression against property, auto-aggression, and physical aggression as observed by parents in the past week). It is an observational measure of aggression modified from the Overt Aggression Scale.^[9] Ownership of houses and cars is used to determine socio-economic status.^[10]

A pilot study was conducted with 15% of the sample (58 primary school students were randomly selected from a single school), and all participants were excluded from the main

Table 2 | Distribution of playing video games (n=500)

Features	Playing video games			
	Yes		No	
	No.	%	No.	%
Male	207	89.3	25	10.7
Female	208	77.7	60	22.3
Total	415	83	85	17

Table 3 Social Context and Time of Playing			
	(n=415)	No.	%
Duration of playing video games years	< 5	228	54.9
	≥ 5	187	45.1
No. of games the children have	< 4	339	81.7
	≥ 4	76	18.3
Playing status	Alone	93	22.4
	With others	273	65.8
	Both	49	11.8
No. close friends (n=500)	1	56	11.2
	2+	444	88.8
Times of outdoor playing per week (n=500)	< 3	434	86.8
	≥ 3	66	13.2
Hours playing video games daily	≤ 3	378	91.1
	> 3	37	8.9
Hours play video games weekend	≤ 3	343	71.7
	> 3	71	17.1
Hours other activity Weekly (n=500)	≤ 3	429	85.8
	> 3	71	14.2
Hours other activity weekend (n=500)	≤ 3	418	83.6
	> 3	82	16.4

study sample.

Data Management and Statistical Analysis: Data were entered and analysed using SPSS (Statistical Package for the Social Sciences) version 26. Descriptive statistics were presented as frequencies, percentages, means, and standard deviations. Chi-square test is used to find the presence or absence of a significant association between the categorical variables, or Fisher's exact test, whenever applicable. A p-value equal to or less than 0.05

was considered statistically significant.

RESULTS

A total of 500 primary school children in Baghdad's Al-Rasafa district were enrolled in this study. The sociodemographic variables are shown in **Table 1**.

Of the total sample, 415 (83%) students were gaming, and 85 (17%) were not gaming, with 208 (77.7%) of the females and 207 (89.3%) of the males playing video games, as shown in **Table 2**.

About types of gaming systems, out of the total sample, 413 (82.6%) of the target children were using phones, 176 (35.2%) tablets, 157 (31.4%) Sony PlayStation, 74 (14.8%) computers or laptops, 41 (8.2%) were playing with X-box, 5 (1%) were using Virtual Reality VR, 3 (0.6%) are using Sega, 2 (0.4%) were playing with Nintendo, and 1 (0.2%) was using Retro mini game console.

The distribution of social context and time of playing is shown in **Table 3**.

Regarding parental monitoring of gamers, 296 (71.3%) of the parents monitor the time spent playing video games, compared with 23 (5.6%) who do not monitor and 96 (23.1%) who are not actively monitoring. Regarding the timing of gaming, 276 (66.6%) of the parents allow their children to play for a set time, while 38 (9.1%) do not care about setting a time for

Table 4 Association between types of aggression and playing status						
Type of Aggression		Gamers		Non-gamers		P value
		No.	%	No.	%	
Verbal Aggression	Yes	216	89.6	25	10.4	0.0001*
	No	199	76.8	60	23.2	
Aggression against property	Yes	84	87.5	12	12.5	NS†
	No	331	82	73	18	
Auto-aggression	Yes	27	93.1	2	6.9	NS†
	No	388	82.4	83	17.6	
Physical aggression	Yes	130	93.5	9	6.5	0.0001*
	No	285	79	76	21	
Aggression	Yes	82	19.8	6	7.1	0.005*
	No	333	80.2	79	92.9	

† NS: not statistically significant. * Statistically significant is if a p-value is less than 0.05.

playing, and 101 (24.3%) sometimes arrange the time of playing. Most parents (341, 82.1%) are carefully monitoring the content of video games, while only 17 (4.1%) are not, and 57 (13.8%) are sometimes monitoring it. Among parents who purchase during gaming, 280 (67.4%) do not allow their children to purchase during gaming, compared with 55 (13.3%) who allow purchasing and 80 (19.3%) who sometimes allow purchasing while gaming.

The association between aggression types and playing status (gaming and non-gaming) is shown in **Table 4**.

The association between the social context and time of play among gamers is shown in **Table 6**. Furthermore, **Table 7** shows significant associations between parental monitoring of players' time and the content of video games ($p=0.00002$ and $p=0.0000001$, respectively), whereas there were no significant associations between giving gamers a set time to play ($p=0.072$) and purchasing during gaming ($p=0.122$).

DISCUSSION

This study found a 83% prevalence of video game play, consistent with a 2020 study in Hong Kong (83%)^[11] and a 2019 study in India (83.7%).^[12] It is lower than the 2020 study in Jeddah/Saudi Arabia, which found that 95.1% of participants were playing video games.^[12] Discrepancies may stem from sociocultural, economic, and methodological factors. Our study showed that 82.6% of the children preferred mobile gaming, consistent with research conducted in Taiwan and China in 2022, which found that 85% of children used mobile devices to play video games.^[13] Affordability, portability, greater emphasis on short events, easy-to-learn, repeatable gameplay, and in-app purchasing (for free and affordable games) are all reasons why children prefer mobile gaming. Males play video games more than females, as shown in our study: 89.3% of the boys and 77.7% of the girls play video games.

A cross-sectional study conducted in

Table 5 | Association between sociodemographic variables and aggression among gamers (n=415)

Playing video games		No Aggression		Aggression		P value
		No.	%	No.	%	
Child's age	6-9 years	272	95.4	13	4.6	NS†
	10-13	127	97.7	3	2.3	
Child sex	Male	196	94.7	11	5.3	NS†
	Female	203	97.6	5	2.4	
Mother's age	<30 years	73	96.1	3	3.9	NS†
	30---49	317	96.1	13	3.9	
	≥ 50	9	100.0	-	-	
Mother's education	Illiterate	7	100.0	-	-	NS†
	≤ Secondary	197	95.6	9	4.4	
	> Secondary	195	96.5	7	3.5	
Mother's working status	Not working	265	95.3	13	4.7	NS†
	Working	134	97.8	3	2.2	
Father's age	< 30 years	5	83.3	1	16.7	NS†
	30---49	326	96.7	11	3.3	
	≥ 50	68	94.4	4	5.6	
Father's education	Illiterate	9	100.0	-	-	NS†
	≤ Secondary	175	95.6	8	4.4	
	> Secondary	215	96.4	8	3.6	
Father's working status	Not working	118	96.7	4	3.3	NS†
	Working	281	95.9	12	4.1	
Caretaker	Parent	392	96.6	14	3.4	0.0001*
	Step-parent	5	100.0	-	-	
	Grandparent	2	50.0	2	50.0	
Marital status	Married	376	96.7	13	3.3	NS†
	Divorced	17	89.5	2	10.5	
	Widowed	6	85.7	1	14.3	
Number of children	1	29	100.0	-	-	NS†
	2	132	95.0	7	5.0	
	3+	238	96.4	9	3.6	
Rank of child	1	171	96.6	6	3.4	NS†
	2	115	95.8	5	4.2	
	3+	113	95.8	5	4.2	
SES	Low	15	93.8	1	6.2	NS†
	Middle	184	95.3	9	4.7	
	High	200	97.1	6	2.9	

† NS: not statistically significant. * Statistically significant if a p-value is less than 0.05.

2021 in Ankara, Turkey, showed the same: males played more video games than females (64.3% vs. 44.3%, respectively).^[14] The gender intensification hypothesis proposed by Hill and Lynch suggests that boys and girls are challenged with greater pressure to imitate culturally sanctioned gender roles that have

Table 6 Association between social context and time of gaming with aggression among gamers (n=415)						
Social Context and Time of Gaming Among Gamers		No Aggression		Aggression		P value
		No.	%	No.	%	
Duration of playing (years)	< 5	217	95.2	11	4.8	† NS
	≥ 5	182	97.3	5	2.7	
No. of games	< 4	328	96.8	11	3.2	† NS
	≥ 4	71	93.4	5	6.6	
Playing status	Alone	89	95.7	4	4.3	† NS
	With others	263	96.3	10	3.7	
	Both	47	95.9	2	4.1	
No. close friends	1	43	100.0	-	-	† NS
	2+	356	95.7	16	4.3	
Times of outdoor playing/week	<3	399	96.1	16	3.9	-
	≥3	0	0	0	0	
Hours of playing VG during school days	<3	365	96.6	13	3.4	† NS
	≥3	34	91.9	3	8.1	
Hours of play VG at the weekends	<3	333	96.8	11	3.2	† NS
	≥3	66	93.0	5	7.0	
Hours of other activities during school days	<3	343	96.6	12	3.4	† NS
	≥3	56	93.3	4	6.7	
Hours spent doing other activities at the weekend	<3	333	97.1	10	2.9	0.030*
	≥3	66	91.7	6	8.3	

† NS: not statistically significant. * Statistically significant if a p-value is less than 0.05.

been established since childhood.^[15] The so-called appropriate gender roles are conveyed by parents, educators, peers, and the media. This study showed a significant association between aggression and video gaming. Mild to moderate aggression is acceptable among children according to psychiatrists, as they

often recognise that mild forms of aggression, such as occasional conflicts or assertiveness, can be a normal part of childhood development (normal developmental milestone). This includes behaviours like standing up for oneself, negotiating peer interactions, learning social boundaries, and can be a developmental

Table 7 Association between social context and time of gaming with aggression among gamers (n=415)						
Playing video games		No Aggression		Aggression		P value
		No.	%	No.	%	
Monitoring the amount of time spent gaming	Always	287	97	9	3	0.00002*
	Sometimes	94	98	2	2	
	Never	18	78.3	5	21.7	
Limited time for gaming	Always	268	97.1	8	2.9	† NS
	Sometimes	97	96	4	4	
	Never	34	89.5	4	10.5	
Monitoring the content of video games	Always	331	97	10	3	0.0000001*
	Sometimes	56	98.2	1	1.8	
	Never	12	70.6	5	29.4	
Purchase during gaming	Always	53	96.4	2	3.6	† NS
	Sometimes	80	100	-	-	
	Never	266	95	14	5	

† NS: not statistically significant. * Statistically significant if a p-value is less than 0.05.

step towards learning conflict resolution and emotional regulation. It is often considered within the range of typical childhood behaviour. [16] Some studies have not found a significant relationship between video games and aggression, [17] a quite solid association has been established in cross-sectional, experimental, and longitudinal studies. For example, most research has found that video games increase aggressive thoughts, physiological arousal, and angry feelings, and increase aggressive behaviours, while decreasing empathy and helping behaviours. A meta-analysis was used to test the effects of violent video games on aggressive cognition, aggressive behaviour, physiological arousal, aggressive affect, desensitisation, and prosocial behaviour. The outline of results for research designs (cross-sectional, experimental, and longitudinal) and different outcomes fit theoretical expectations as well. The evidence intensely suggests that exposure to violent video games is an underlying risk factor for increased aggressive cognition, aggressive behaviour, and aggressive affect, as well as decreased prosocial behaviour and empathy. [18] An experiment explored the effects of violent video games on the accessibility of aggressive thoughts in children. Playing violent video games led to aggressive thoughts being stimulated in semantic memory and to high cortisol levels during video gaming for elementary school children. These effects occurred even when frustration with the game was controlled. The cortisol results suggest that for children, playing violent video games can activate the sympathetic nervous system, resulting in increased stress hormones and aggression. [19] In the playing context, whether alone or with others, no significant association with aggression was found in this study. Results show that the social context plays an essential role in the effects of playing violent video games. [20] Violent video games increase aggression and aggression-related variables. These effects were reliable across correlational, experimental, and longitudinal studies, showing that video game exposure causally affects social outcomes and that these effects are both short- and long-term. [21] Regarding the gamers in this study, playing and doing activities, rather than

video games, was associated with aggression. This is similar to published Australian research in 2017, which suggests that playful aggression during early childhood is part of normal development, especially in social, cognitive, communicative, and physical development. [22] This study showed a significant association between parental monitoring of the timing of gaming and the content of video games and aggression. Unlike a study done on Norwegian children in 2018, which revealed no significance of parental monitoring on children's behaviour. [23]

CONCLUSION

Video gaming is highly prevalent among primary school children in Baghdad, particularly among males and those using mobile phones. Gaming is associated with aggression, especially verbal and physical forms. Importantly, parental monitoring of gaming time and content demonstrated a strong protective effect against aggression.

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