

Research Article

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Electronic Game Addiction and Eating Behaviors: Implications for Adolescent Health and Academic Engagement in Jordan

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Abstract

Background/purpose. The current research explores the interrelation between electronic game addiction, emotional eating, and eating disorder symptoms among Jordanian adolescents. A quantitative, correlational survey design was used to investigate these associations in an educational context.

Materials/methods. The Game Addiction Scale for Adolescents (GASA), Emotional Eater Questionnaire (EEQ), and Eating Attitudes Test (EAT-26) were administered to 141 private and public-school students.

Results. The findings showed moderate levels of gaming addiction and emotional eating, with no significant gender differences. Emotional eating appeared to be the strongest contributor to disordered eating behaviors. Although the effect of gaming addiction was weak, it was still positively related to disordered eating patterns. These associations suggest potential behavioral risks for adolescent well-being.

Conclusion. These findings highlight the need for targeting emotional eating and gaming in adolescent health interventions. Implications for educational support programs are discussed. Future research should explore the psychological mechanisms of these manners' relation to eating disorders.

1. Introduction

Creators of electronic games often target teenagers as their main audience, as adolescence is characterized by psychological challenges and internal conflicts that frequently involve conflicts with authoritative figures, such as parents. Electronic games frequently provide a readily available means for teens to explore their emotions and seek distraction from the stresses of daily life (Young, 2009; Domoff et al., 2025). Research has indicated that most video gamers tend to be younger and inexperienced individuals who might have emotional issues or lower self-esteem. These games may also impact how adolescents manage stress and approach their academic responsibilities. They provide people with the opportunity to explore aspects of their identity, try new hobbies, or assume leadership roles, thereby teaching them a sense of self-awareness and personal effectiveness. The activity can increase self-esteem and create feelings of thrill and emotional satisfaction, especially when they are rewarded in the virtual gaming world (Iacolino et al., 2019; McGee & Mokhtar, 2024).

Yet, the swift development of the gaming industry and the wide range of available electronic games with stimulating settings and natural scenery, such as beaches, mountains, and cities, as well as personalization options for virtual characters, have contributed to the rise of gaming addiction among teens. Gamers can select their sex, ethnicity, height, weight, race, and even name, thus designing their own personal virtual worlds. Consequently, it is unsurprising that adolescents exhibit a high scope of gaming addiction, often dedicating extensive periods to engagement within these virtual settings (Young, 2009; Huamani-Cahua & Ojeda Flores, 2025). This extended engagement may lead to a reduced focus on schoolwork and a decline in academic participation.

It is essential to recognize that not every online game is inherently addictive or detrimental. Certain games may facilitate language proficiency improvement or cognitive growth, especially those that incorporate problem-solving or mathematical tasks. Such cognitive benefits may support academic development when gaming is used in moderation. Nevertheless, games characterized by interactive and competitive features are generally associated with an increased likelihood of addiction (Xu et al., 2012; Lopez et al., 2024). Addiction to games is a potentially catastrophic phenomenon that entails physical and emotional harm caused by playing games for extensive periods of time, ranging from 10 to 20 hours a day. It may result in seclusion, sleep deficiency, excessive stress, and eating disorders, such as overeating or skipping meals (Xu et al., 2012; Kurt et al., 2024).

Prolonged gaming sessions lead to social detachment among gamers, where they become so involved in virtual worlds that they even forget to take breaks for meals. This practice encourages the development of unhealthy eating habits, including reliance on fast and junk food delivery or the consumption of large portions of food during moments of boredom or intense emotional stimulation associated with gaming. These habits may negatively impact students' concentration, energy levels, and overall participation in academic activities. This is termed emotional eating, which involves consuming food as a means of responding to stress, fatigue, anxiety, symptoms of depression, feelings of loneliness, and boredom (Nguyen-Rodriguez et al., 2009; Ballarotto & Zavattini, 2024).

Caner and Evgin (2021) asserted that video gaming addiction and the manifestation of violent behaviors are critical predictors of eating disorders among adolescents, including unconstrained eating, losing control and command of eating, or emotional eating. It is postulated that gaming addiction is responsible for the formation of depressive symptoms, anxiety and stress, hence leading to emotional regulation deficits, particularly among adolescents. There is also a statistically significant correlation between gaming addiction and violent behavior among adolescents who have difficulty in expressing and regulating their emotions. Also, there has been a strong positive correlation between gaming session length and caloric intake in response to stress, and it has been suggested that gaming addiction could be an important predictor of the development of emotional eating and

eating disorders in adolescents (Solmaz et al., 2025). As emotional regulation difficulties increase, students may struggle to stay engaged with academic tasks or school routines.

Considering the escalating rates of gaming disorders, emotional eating, and eating disorders across the world, particularly among teenagers, the present study aims to pin down the degree to which electronic game addiction and emotional eating predict eating disorders in a sample of Jordanian adolescents. Such a concern is paramount for the development of interventions and prevention programs specifically for this vulnerable population. Findings may also inform the design of educational support strategies to help students regulate digital and emotional behaviors that interfere with school adjustment.

Though emotional eating, maladaptive coping, and eating disorders are associated with each other, they are distinct constructs. Emotional eating refers to eating in response to emotional states, rather than physiological hunger. It is a coping mechanism, often for negative emotions such as stress or depression. Eating disorders, by contrast, are clinically diagnosed disorders of chronic disordered eating behavior, i.e., anorexia nervosa or bulimia. Emotional eating in this study is discussed as a maladaptive coping style that may result in the development of eating disorder symptoms but does not necessarily, on its own, signify a clinical diagnosis.

This study aims to investigate the correlations among electronic game addiction, emotional eating, and eating disorder symptoms in adolescents, focusing on their potential effects on student health and academic performance.

The research questions are as follows:

1. What are the levels of electronic game addiction, emotional eating, and eating disorder symptoms among Jordanian adolescents?
2. Are there gender differences in these variables?
3. To what extent does emotional eating predict eating disorder symptoms?
4. Does electronic game addiction contribute to eating disorder symptoms?
5. What are the potential educational implications of these behaviors?

2. Literature Review

2.1. *Electronic Game Addiction*

This concept is popular and very much considered as a means of entertainment for teenagers, delivering stimulating experiences which sometimes lead to self-indulgence. According to the American Psychiatric Association (2013), gaming addiction is a conduct pattern that encompasses spending excessive time on gaming, taking precedence of gaming over other interests and activities, and continued use of gaming despite negative consequences. This pattern may lead to severe failure and impairment in personal, family, social, educational, and occupational aspects of life.

The interactive design of modern electronic games is one of the reasons many adolescents find it difficult to distinguish electronic success from real life duties. Young (2009) suggests that the interactive settings and reward systems within games can lead to extremely lengthy gaming times, with the potential development of addictive habits. The submergence can lead adolescents to shed the core aspects of their lives, including education, social life, and physical well-being. Additionally, research suggests that excessive gaming has an impact on adolescents' executive functions such as cognitive control, decision-making, and self-regulation (Medina-Rodríguez, 2025).

Research indicates that the propagation of gaming addiction in adolescents is increasing. In a study conducted by Gentile (2009), approximately 8.5% of children aged between 8 and 18 years

exhibited pathological gaming behavior, which was considered excessive gaming time and interconnected opposing outcomes. More recent prognostications put the prevalence of gaming disorder worldwide at about 3.05%, i.e., that millions of individuals might be affected (Stevens et al., 2021). Other studies pointed out that excessive gaming is associated with mental health issues, including increased anxiety, depression and withdrawal from social relations (Shrestha et al., 2025). Excessive gaming is said by Oublkhir, Amal, and Ziani (2024) to result in increased aggressiveness and behavioral misconduct among teenagers.

Gaming addiction's upshots also extend beyond the immediate effects of lengthy playing of games. Xu et al. (2012) identify that chronic gaming was related to physical health issues like insufficient sleep and other issues related to static lifestyle, as well as psychological issues such as increased stress and loneliness. These factors can contribute to the development of maladaptive coping mechanisms, such as emotional eating, further disorienting the health profiles of troubled adolescents. Mateo-Orcajada et al. (2024) also found that parental monitoring is implicated in adolescent gaming addiction and that higher control is linked with more severe gaming.

Understanding the multifaceted role of video game addiction is significant in developing effective interventions. Through the awareness of gaming addiction signs and the extent to which it may affect other facets of a teenager's life, parents, educators, and medical practitioners can jointly address these challenges. Having measures to foster balanced gaming practice and intervention support for individuals demonstrating addictive tendencies are critical to avoid the unwanted outcomes that are common in uncontrolled and lengthy gaming. Studies show that interventions that integrate cognitive-behavioral therapy (CBT) and social support networks could be effective in reducing gaming addiction severity (Huamani-Cahua et al., 2025).

2.2. Theoretical Framework

Based on Cognitive-Behavioral Theory (CBT) and Self-Regulation Theory, this study argues that maladaptive thoughts and dysfunctional beliefs in CBT can lead to maladaptive behaviors, which in turn can result in coping strategies such as emotional overeating or excessive gaming. Based on Self-Regulation Theory, low emotional control in adolescents can trigger the application of compulsive activities like overeating or overgaming as a psychological relief from distress. These models help to account for the processes behind the relations between emotional eating, gaming addiction and symptoms of eating disorders.

2.3. Emotional Eating and Triggers

Emotional eating refers to the consumption of food in response to emotional cues rather than physical hunger, often triggered by negative emotions such as stress, anxiety, or depression (Marinković et al., 2024). It is particularly prevalent during adolescence, a time marked by significant emotional fluctuations. Perceived anxiety and stress have been strongly found to be associated with emotional eating in adolescents (Dewi & Musyafira, 2024). Most notably, there have been considerable gender differences: girls are more likely to be susceptible to stress and anxiety-based emotional eating, and boys are more likely to respond to confusion (Kösem & Bektaş, 2025).

What lies between gaming and emotional eating is perhaps the most disturbing, as gaming is both a possible precipitant and a reinforcer of the activity. Research that examined the association between digital game addiction and emotional eating showed that spoiled teenagers could use food as a coping strategy for their adverse emotions, triggering unhealthy eating behavior and weight increase (López-Gil, 2025). Besides, gaming addiction was also correlated with higher consumption of junk foods and more between-meals snacking, also dangerous improper eating habits (Güney & Göbel, 2024).

Aside from this, emotional eating was also linked with obesity, irregular eating habits, and increased symptoms of depression, creating a negative cycle of viciousness between eating maladaptation and emotional discomfort (Xu et al., 2025). Adolescents with poor control over emotional eating eat more calorie-dense, processed foods, which are associated with higher levels of stress and emotional instability (Melani & Sitoayu, 2024). Emotional eating as a habit uses more energy and increases the risk of being overweight and obesity, which can further contribute to mental health issues (Antia, 2025).

With the high recurrence of both eating and gaming amongst adolescents, gaining insight into their interaction is the key to informing interventions that improve their lifestyles and can prevent the onset of eating disorders in this sensitive group (Odar-Stough et al., 2025).

2.4. Gaming Addiction and Eating Disorders

Studies indicate that there is a high correlation between the duration of gaming among teenagers and the development of poor eating habits, which can evolve into full-blown eating disorders (Bozkurt et al., 2018). The addictive aspect of gaming, underpinned by instant gratification mechanisms, is observed in trends typical of disordered eating behaviors like bingeing or anorexia (Kuss & Griffiths, 2015). A study assessing the effect of digital play addiction on eating habits concluded that teenagers with digital gaming addiction had abnormal and eccentric meal consumption frequency, increased between-meal snacking, and preference for fast foods, all of which are characteristics of poor eating habits (Kösem & Bektaş, 2025).

Besides, gaming addiction has also been correlated with increased aggression, which is one of the sturdiest predictors of eating disorders in adolescents. Research indicates that the more addicted to gaming the adolescent is, the more aggressive they will be, and the more aggressive, the greater the likelihood of developing eating disorders (Marinković et al., 2024). The convergence of gaming addiction, aggression, and eating disorders shows the complex psychological problems that adolescents face today.

2.5. The Wider Implications of Gaming on Teenage Health

The addiction of adolescents to electronic gaming has been correlated with several psychosocial issues, such as higher aggression, which may foster eating behavior and the ability to acquire eating disorders (King et al., 2019; Paulus et al., 2018). Bozkurt et al. (2018) argued that adolescents who are addicted to playing video games present greater levels of aggression than non-addicts. This heightened aggression can lead to emotional dysregulation and, consequently, to unhealthy coping strategies like emotional eating (Männikkö et al., 2017). Excessive gaming has also been correlated with increased impulsivity and emotional instability that drive disordered eating (Lemmens et al., 2011).

In addition, physical effects of excessive electronic gaming hours can significantly impair teenagers' health and render them extremely vulnerable to eating disorders. Extended periods of electronic game playing are usually accompanied by irregular sleep schedules, which have been shown to increase hunger and food craving for high calories food, thus predisposing one to eating disorders (Weinstein, 2010; Chaput et al., 2017). Moreover, the sedentary nature of gaming results in low levels of physical activity, which is a risk factor for obesity and eating disorders (Stettler et al., 2004; Vancampfort et al., 2021). Longitudinal studies indicated that teenagers with excessive gaming have lower energy intake and unhealthy nutrition, which further increase their vulnerability to gain weight and other related metabolic disorders (Melkevik et al., 2010).

The above findings illustrate the necessity for monitoring electronic gaming habits among teenagers and encouraging healthy lifestyles of frequent physical exercise and healthy dietary habits to reduce the risk of exposure to eating disorders. Intervention programs must incorporate parental

monitoring, control of gaming time, and encouragement of physical activities to counterbalance negative health consequences (Gentile et al., 2011). Additionally, studies showed that systematic behavioral treatments of screen time and diet may have the power to significantly promote health outcomes in adolescents (Staiano et al., 2016).

2.6. Educational Implications of Gaming and Eating Behaviors

Studies have increasingly demonstrated that electronic gaming and emotional dysregulation can negatively affect academic performance in adolescents. Emotional eating and excessive digital usage are frequently associated with diminished concentration, heightened school absenteeism, and decreased classroom engagement (Gentile, 2009; Kuss & Griffiths, 2012; Sywelem & Alotaibi, 2025). These behaviors may hinder students' capacity to retain information, engage actively, or fulfill academic requirements. Teenagers who struggle with gaming addiction and related eating disorders may perform worse in school, which adds to their mental stress and exacerbates their maladaptive coping habits. It is essential to identify these patterns in schools so that students can receive help early through educational counseling and behavioral intervention programs (Khoziasheva, 2025; Martínez-Fernández & Seabra, 2025).

After establishing the underlying interaction among electronic gaming addiction, emotional eating, and how they can modulate eating disorders in adolescents, the second step for this research calls for a systematic exploration of these interactions via the use of a well-bounded empirical model. This section outlines the research methodology employed to describe the standards for participant selection, data collection tools, and analysis techniques used to analyze the data. The research design aims to employ a systematic approach that ensures the reliability and validity of the findings, ultimately providing meaningful information about the determinants of eating disorders in Jordanian adolescents. Identification of determinants is core to the development of targeted prevention and intervention strategies for eating disorders in adolescents based on their causes and presentations.

3. Methodology

This study employed a quantitative, correlational research design to explore associations among electronic gaming addiction, emotional eating, and eating disorder symptoms in adolescents.

3.1. Validation and Adaptation

All the tools used in this research underwent rigorous validation processes to ensure their appropriateness, usability and suitability in the context of Jordanian teenagers. Pilot studies testing cultural adaptation and translation were preceded by reliability testing using Cronbach's alpha to confirm their internal reliability among this specific group (Tavakol & Dennick, 2011). Existing research identified the need for using culturally adapted psychometric measures to enhance the validity of data for assessing psychological and behavioral health issues (Van de Vijver & Tanzer, 2004).

These scales provide a theoretical framework through which the coupled dynamics of electronic game addiction and emotional eating could be understood, providing insights regarding their potential to contribute to eating disorder development within the category of Jordanian youths. The strategic application of the measures will provide the most prominent factor in establishing the extent of the findings of this study and provide a useful platform for prevention and intervention techniques.

All instruments and research tools were translated into Arabic using forward and back translation techniques followed by a review by an expert panel. The pilot study, which included 15 adolescents, was used to assess item clarity and cultural appropriateness. Items were also adjusted considering linguistic and cultural concerns typical of the Jordanian adolescent population.

While GASA, EEQ, and EAT-26 are in common use globally, normative data specific to Jordan were not available at the time of this study. Careful consideration was therefore necessary in interpreting the findings, and future studies are encouraged to develop local norms to improve cultural sensitivity and validity.

A non-probabilistic, convenience sampling method was used, which limits the generalizability of results to the broader adolescent population.

3.2. Participants

A total of 141 secondary school students (73 male and 68 female) from several public and private secondary schools across Jordan participated in this study. Their ages ranged from 13 to 18 years, with an average age of 15.6 years ($SD = 1.4$). The research team selected participants using a non-probabilistic, convenience sampling method, and the schools participated voluntarily.

To be eligible for the study, students had to be between 13 to 18 years old, enrolled as full-time students at their schools, and able to read and understand Arabic, as the questionnaires were prepared in this language. Each student gave their personal assent to take part in the study, while written consent was obtained from their parents or legal guardians. Students were excluded if they had a diagnosed psychological or psychiatric disorder or were currently receiving psychological therapy or treatment. Incomplete responses and students who chose to withdraw at any point were also excluded from the final analysis.

Table 1. Demographic Details

	Variable	N	%
Gender	Male	73	51.8%
	Female	68	48.2%
Age Group	13–15 years	30	21.3%
	16–18 years	111	78.7%
School Type	Public School	79	56.0%
	Private School	62	44.0%

3.3. Population Information: Demographic Details

Students from both public (56%) and private (44%) schools were part of the group. Table 1 provides an overview of the demographic characteristics of the participants.

3.4. Recruitment and Approval of Ethics

The research team collected data over a period of three months during the academic year. Supported by school principals and psychology experts, the study's objectives were clearly explained to both students and their guardians to ensure an informed understanding and cooperation. Written consent was obtained from parents or legal guardians, along with student assent before participation.

The study complied with the ethical standards outlined by the American Psychological Association (2017) and the World Medical Association Declaration of Helsinki (2013).

3.5. Procedure

While the study offers some insights into adolescent behavioral patterns, it is important to note that no intervention or follow-up was conducted. Thus, the findings reflect cross-sectional associations between behaviors at one point in time, but not treatment effects or developmental trends.

Data were collected over a period of three months. The participants in this study completed questionnaires during school hours under the supervision of trained research assistants to ensure response confidentiality and to minimize potential bias. Informed consent was obtained from both guardians and adolescents prior to participation. Ethical guidelines—including confidentiality, voluntary consent, and data protection—were followed in accordance with human subjects research principles (American Psychological Association, 2017; World Medical Association, 2013).

3.6. Data Analysis

The data for this study were analyzed using IBM SPSS Statistics, version 26. Descriptive statistics (means, standard deviations, skewness, and kurtosis) were computed to evaluate the distribution of the study variables. As Shapiro–Wilk tests for normality indicated significant deviations (W values between 0.774 and 0.858, $p < .001$ for all), non-parametric statistical methods were used.

To assess the inter-correlations between gaming addiction, emotional eating, and eating disorder symptoms, the Spearman rank-order correlation coefficient was applied due to the non-normal distribution of the data. In addition, multiple linear regression analysis was conducted to examine whether gaming addiction and emotional eating significantly predicted eating disorder symptoms in adolescents. The significance level was established at $p < .05$, and the effect sizes (R^2 and standardized beta coefficients) were calculated to evaluate the strength of associations.

3.7. Ethical Concerns

All the methods used in the studies with human participants were in accordance with the ethical guidelines of the research committee of the institution and the 1964 Helsinki declaration and its amendments or equivalent ethical standards. Informed written consent was given by all participants prior to their engagement in the study. Because the participants were children, additional consent from parents or guardians was given in line with institutional and national research ethics. Participants were assured of confidentiality, voluntary participation, and the ability to withdraw at any time without consequences.

4. Results

The study included 141 participants who were recruited from public and private schools in Jordan. Descriptive statistics of the Game Addiction Scale (GASA), Emotional Eater Questionnaire (EEQ), and Eating Attitudes Test (EAT-26) revealed that gaming addiction and emotional eating were moderately prevalent, while eating disorder symptoms were relatively less pronounced among the participants. The mean GASA and EEQ scores were at a medium level, representing moderate involvement in gaming addiction and emotional eating. Scores on the EAT-26 showed a lower prevalence of eating disorder symptoms among this adolescent sample.

4.1. Descriptive Statistics of the Study Variables

Table 2 presents the descriptive statistics for the Game Addiction Scale for Adolescents (GASA), Emotional Eater Questionnaire (EEQ), and Eating Attitudes Test (EAT-26) in gender subgroups. The comparison revealed that the GASA scores were comparable between genders, with females scoring $M = 18.8$, $SD = 7.04$, range = 8.00–27.0 and males scoring $M = 18.7$, $SD = 6.94$, range = 8.00–27.0, indicating no differences between genders. Emotional eating (EEQ) scores were slightly higher in

men, $M = 25.6$, $SD = 8.61$, range = 10.00–37.0, compared to women, with $M = 24.8$, $SD = 8.55$, range = 9.00–36.0; however, this difference was not statistically significant. Symptoms of eating disorders (EAT-26) scores were relatively low for both genders, with females scoring $M = 82.4$, $SD = 29.66$, range = 40.00–120.0, and males scoring $M = 87.7$, $SD = 27.41$, range = 46.00–120.0. In addition, the Shapiro-Wilk normality test revealed significant deviations from normality for all study variables (W values: 0.774–0.858, $p < .001$), which validated the appropriateness of non-parametric statistical tests for subsequent analyses.

Table 2. Descriptive statistics for the Electronic Game Addiction Scale for Adolescents (GASA), Emotional Eater Questionnaire (EEQ), and Eating Attitudes Test (EAT-26) in gender subgroups

Measure	Gender	N	Mean (M)	95% CI Lower	95% CI Upper	SD	Minimum	Maximum	Shapiro-Wilk W	p-value
GASA	Female	68	18.8	17.1	20.5	7.04	8	27	0.774	< .001
	Male	73	18.7	17.1	20.3	6.94	8	27	0.794	< .001
EEQ	Female	68	24.8	22.8	26.9	8.55	9	36	0.858	< .001
	Male	73	25.6	23.6	27.6	8.61	10	37	0.823	< .001
EAT-26	Female	68	82.4	75.2	89.6	29.66	40	120	0.815	< .001
	Male	73	87.7	81.3	94.1	27.41	46	120	0.813	< .001

Note. The CI of the mean assumes sample means follow a t-distribution with $N - 1$ degrees of freedom

4.2. Correlation Analysis

Table 3 presents Spearman rank-order correlation coefficients between the variables of the study: Game Addiction Scale for Adolescents (GASA), Emotional Eater Questionnaire (EEQ), and (EAT-26). Based on the data, the association between GASA and EEQ was moderate ($r = 0.381$, $p < 0.001$), indicating that there was a significant correlation in which there was increased emotional eating with increased gaming addiction. GASA correlated positively with EAT-26 as well ($r = 0.293$, $p < 0.005$), suggesting a correlation between higher gaming addiction and more eating disorder symptoms. The correlation between EEQ and EAT-26 was considerable ($r = 0.615$, $p < 0.001$), indicating emotional eating behaviors are substantially correlated with eating disorder symptom severity within both genders.

Table 3. Spearman Rank Correlation Matrix

Measure	GASA	EEQ	EAT-26
Game Addiction Scale for Adolescents (GASA)	—		
Emotional Eater Questionnaire (EEQ)	0.762 ***	—	
Eating Attitudes Test (EAT-26)	0.724 ***	0.792 ***	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

4.3. Regression Analysis

Multiple linear regression was used to examine the predictive roles of emotional eating (EEQ) and gaming addiction (GASA) in eating disorder symptoms (EAT-26) in adolescents. The regression model was significant in predicting 71.1% of the variance in eating disorder symptoms ($R^2 = 0.711$, $F = 170$, $p < 0.001$), indicating that emotional eating and gaming addiction both contributed to eating disorder symptoms but at different extents. Emotional eating (EEQ) was the strongest predictor, and had a positive significant relationship with eating disorder symptoms ($\beta = 0.582$, $t = 2.85$, $p = 0.005$).

This means that higher emotional eating is related to more severe eating disorder symptoms. The variance inflation factor (VIF = 6.97) indicates moderate collinearity, which is acceptable.

Gaming addiction (GASA) also had a significant, though weaker, influence on eating disorder symptomatology ($\beta = 0.130$, $t = 3.06$, $p = 0.003$), indicating that gaming addiction is related to eating disorder symptomatology, but weaker than emotional eating. The VIF for GASA was 7.97, indicating moderate collinearity.

Table 4. Results of Multiple Linear Regression Analysis Predicting Eating Disorder Symptoms from Gaming Addiction and Emotional Eating

Predictors	R	R ²	F	Intercept	Estimate	SE	t	p	VIF
Game Addiction (GASA)			170	0.636	0.488	0.159	3.06	0.003	5.97
Emotional Eater Questionnaire (EEQ)	0.843	0.711			0.423	0.148	2.85	0.005	6.97

Mann-Whitney U test was utilized to analyze gender differences in gaming addiction, emotional eating behaviors, and eating disorder symptoms. The Shapiro-Wilk test was used to assess normality for all the study variables. The results indicate that all variables differed significantly with regard to normality ($p < .001$); hence, the use of non-parametric statistical tests for the analysis was justified.

Table 4. Normality Test (Shapiro-Wilk)

Measure	W	p
Game Addiction Scale for Adolescents (GASA)	0.788	< .001
Emotional Eater Questionnaire (EEQ)	0.843	< .001
Eating Attitudes Test (EAT-26)	0.829	< .001

Table 5. Independent Samples T-Test (Mann-Whitney U)

Measure	Statistic	p	Effect Size
Game Addiction for Adolescents (GASA)	2325	0.514	0.0635
Emotional Eater Questionnaire (EEQ)	2271	0.383	0.0852
EAT-26	2193	0.234	0.1164

Note. $H_a: \mu_{Female} \neq \mu_{Male}$

Table 6. Homogeneity of Variances Test (Levene's)

Measure	F	df1	df2	p-value
Game Addiction for Adolescents (GASA)	0.3764	1	139	0.541
Emotional Eater Questionnaire (EEQ)	0.0912	1	139	0.763
EAT-26	4.8295	1	139	0.03

Note. A low p-value indicates a violation of the assumption of equal variances.

Mann-Whitney U test findings indicated no gender-related disparities in gaming addiction, emotional eating habits, or eating disorder symptoms among teenagers. Specifically, both genders did not significantly differ in their scores on the Game Addiction Scale for Adolescents (GASA) ($U =$

2325, $p = 0.514$, effect size = 0.0635), suggesting that both genders experienced comparable levels of gaming addiction. Similarly, Emotional Eating Questionnaire (EEQ) scores ($U = 2271$, $p = 0.383$, effect size = 0.0852) revealed no statistically significant differences between male and female participants in terms of emotional eating behaviors. The results for the Eating Attitudes Test (EAT-26) also failed to find any statistically significant gender difference ($U = 2193$, $p = 0.234$, effect size = 0.1164), indicating that disordered eating symptoms were equally prevalent among both male and female adolescents.

4.4. Homogeneity of Variance Test (Levene's Test)

To further investigate and analyze the variation in scores between gender groups, Levene's Test was applied. Equal variances were found for GASA ($F = 0.3764$, $p = 0.541$) and EEQ ($F = 0.0912$, $p = 0.763$); equal variances were assumed, which means that the variation of scores was relatively even across both male and female participants. However, for EAT-26, the test was significant ($F = 4.8295$, $p = 0.030$), indicating unequal variance and suggesting that variability in eating disorder symptoms was greater in one of the gender groups.

4.5. Conclusion on Gender Differences

Overall, no statistically significant differences were found in the median scores between males and females for gaming addiction, emotional eating behaviors, or eating disorder symptoms. However, a significant variance difference in EAT-26 scores suggests greater symptom variability within one gender, warranting further research into contributing factors such as cultural influences, psychological stressors, or gender-specific risk factors. Such variables should be explored further in future research to understand why the variability, rather than the average level of eating disorder symptoms, may differ between adolescent males and females.

5. Discussion

The current study examined the relationships between gaming addiction, emotional eating, and eating disorder symptoms among Jordanian adolescents, with a focusing on potential gender differences. Our findings revealed no significant gender differences in gaming addiction and emotional eating are concerned, which means that both behaviors are prevalent across genders among adolescents. This aligns with previous research, which indicates that computer gaming and affective responses to stress, such as food intake, can be gender-neutral (Caner & Evgin, 2021; Bozkurt et al., 2018).

Additionally, the results of this study revealed that emotional eating and gaming addiction were associated with eating disorder symptoms, with emotional eating emerging as a stronger predictor. This calls attention to the relevance of emotional regulation in eating disorders and the necessity for full consideration of working on emotional eating as being among the key features of interventions for eating disorder prevention or treatment in adolescents. This conclusion is consistent with findings by Zamani et al. (2021), who linked emotional dysregulation to unhealthy eating behaviors among adolescents.

Interestingly, the Mann-Whitney U test and Levene's Test indicated that variances of eating disorder symptoms, but not gaming addiction or emotional eating, were significantly contrastive between the two genders. This suggests that while the behavior is similar between both genders, the expression or impact of eating disorder symptoms could be different, reflecting a more complex interaction of biological, psychological, and social determinants that could be different between both genders.

The findings of this current study provide meaningful insights into how electronic gaming addiction, emotional eating relate to eating disorders among Jordanian adolescents. The findings

revealed that emotional eating is associated with eating disorder symptoms, explaining 71.1% of the variance in eating disorder symptoms ($R^2 = 0.711$, $p < 0.001$), and with a large effect size ($\beta = 0.582$). Although game addiction was also evidenced to be a pivotal indicator, it contributed less relative to emotional eating ($\beta = 0.130$, $p = 0.024$). These results suggest that, although problematic gaming behavior plays a role, emotional eating is a more substantial contributor to disordered eating symptomatology in adolescents.

The positive correlation between gaming addiction and eating disorder symptoms ($r = 0.293$, $p < 0.005$) supports previous findings that excessive gaming is typically associated with maladaptive coping mechanisms, such as emotional eating (Bozkurt et al., 2018; Zamani et al., 2021). Adolescents who spend long periods of time involved in the online world of electronic games can develop unhealthy eating habits, including skipping meals, mindless snacking, and heavy reliance on fast food, all of which can increase the likelihood of developing eating disorders. However, the fairly modest effect portion of gaming addiction on eating disorder symptoms suggests that gaming is not the primary motivation for disordered eating behaviors in adolescents per se. Instead, electronic game addiction may act as a secondary or supportive element, and in combination with emotional eating behaviors, can become the cause of developing unhealthy eating patterns.

5.1. Gender Differences and Variability in Eating Disorder Symptoms

The gender differences test showed that both genders reported similar levels of electronic game addiction and emotional eating, with eating disorder symptoms also comparable between both genders. While previous research has shown a higher prevalence of emotional eating in women (Nguyen-Rodriguez et al., 2009), the current study found slightly higher levels of emotional eating among male participants, although this difference was not statistically significant. This may reflect an emerging trend in adolescent boys' utilization of emotional regulation strategies, and future studies should further investigate gender-specific emotional coping strategies.

Although median differences in eating disorder symptoms were not significant, the variance of EAT-26 scores did differ significantly by gender ($F = 4.8295$, $p = 0.030$). Levene's test indicated unequal variances for EAT-26 scores. This suggests greater within-group variability, which may be indicative of gender-specific psychological constructs such as body image pressure or coping style, warranting further investigation. This implies that while the overall prevalence of eating disorder symptoms may be equal between both genders, symptom severity is more heterogeneous within one gender category. This finding highlights the importance of taking into consideration the individual differences in disordered eating behavior, rather than mean differences. Future studies must investigate potential moderating variables, such as sociocultural pressures, body dissatisfaction, and psychological stressors, that may explain the greater variance in eating disorder symptoms within one gender group.

5.2. Theoretical Implications

These findings contribute to the growing literature on the psychosocial predictors of eating disorders in adolescents. The tight connection between eating disorder symptoms and emotional eating is consistent with previous research in which the importance of emotional dysregulation has been asserted for developing disordered eating (Nguyen-Rodriguez et al., 2009; Caner & Evgin, 2021). Individuals who lack efficient regulation of emotions tend to use food as an attempt to cope with emotional responses and hence become prone to eating disorders. As emotional eating is a stronger predictor of eating disorder symptoms than gaming addiction, interventions that enhance emotional regulation skills may be more effective in reducing disordered eating behavior.

Although gaming addiction was significantly correlated with symptoms of eating disorders, predictive power was weaker. This means that gaming addiction is not expected to result in eating

disorders per se but could co-occur with or exacerbate emotional eating patterns. Gaming addiction indirectly contributes to the development of eating disorders by predisposing one to sedentary behavior, weakened social engagement and unhealthy eating habits. Future research should explore additional mediators, such as stress levels, social pressures, and self-esteem, to better understand the mechanisms involved in gaming addiction and eating disorders.

5.3. Practical Implications

The findings of this study underscore the necessity for early intervention efforts directed towards addressing emotional eating tendencies as well as over-gaming tendencies within teenagers of both genders. Since emotional eating is the most potent predictor of eating disorder symptoms, interventions should concentrate on stress management, developing healthy coping strategies, and training in emotional regulation skills.

School-based psychoeducational programs and mental health services should help adolescents with skills for recognizing and managing emotional eating triggers to embrace mindful eating habits and better food relations. Additionally, the role of gaming addiction towards disordered eating habits suggests moderation strategies and digital wellness initiatives. Teachers, parents, and healthcare providers need to engage in healthy game play habits by restricting screen usage, incorporating active breaks, and offering nutritious substances during game time. Treating both emotional and excessive electronic gaming habits will minimize the risk of eating disorders as well as contribute to better teenage well-being.

One of the strongest limitations of this study is its small sample size ($n = 141$), which limits the generalizability of the findings, especially in subgroup analyses such as gender differences. Additionally, pertinent demographic variables like age range of participants, socioeconomic status, and urban-rural background were not systematically gathered or analyzed. These are strong moderators of adolescent behavior and might affect gaming and eating behaviors. Future research should target the inclusion of larger, representative samples to enable more sophisticated analysis and wider application.

Moreover, although strong correlations were indicative of gaming addiction, emotional eating, and symptoms of eating disorders, the cross-sectional design, observational nature of the study preclude causal interpretation. The findings are correlational in nature. Longitudinal or experimental studies are needed to determine temporal order among the behaviors and explore possible mediating and moderating variables in eating disorder development.

6. Conclusion

The study found that both gaming addiction and emotional eating were significantly correlated with eating disorder symptoms in adolescents, with emotional eating showing a stronger predictive relationship. Although gaming addiction was also associated directly with symptoms of eating disorders, its explanatory power was contrastively much lower compared to emotional eating. Notably, while no significant gender differences were found in median scores on the key variables, variability in eating disorder symptom severity across male and female participants suggests that individual-level psychological processes such as emotions regulation ability or coping style may be more salient than gender itself. Since the study design is cross-sectional, these are not to be viewed as causal relationships but are only indicative of potential lines of inquiry that should be pursued with experimental or longitudinal studies.

These findings highlight the value of intervention programs that focus on emotional management and healthy eating behavior, potentially more impactful than focusing solely on gaming behaviors. Given the high rate of emotional eating among adolescents, school-based psychoeducational programs, cognitive-behavioral interventions, and parenting education programs

must be implemented to help adolescents learn more adaptive coping mechanisms. Future studies should also examine potential moderators and mediators, such as psychological stress, self and body image concerns and social pressures in order to elucidate further the complex relationship between gaming addiction, emotional eating and eating disorders.

In summary, addressing both emotional eating and gaming behaviors is essential in preventing eating disorders among adolescents. By promoting healthy emotional regulation strategies, proposing well-balanced gaming mindsets and facilitating conducive environments, we can help reduce the prevalence of disordered eating habits among these susceptible adolescents. It is highly advised that follow-up research be conducted based on these findings through the examination of longitudinal correlations and causality, providing a stronger basis for planning effective prevention and intervention strategies that are tailored to the needs of adolescents.

Declarations

Conflicts of Interest. No potential conflict of interest was declared by the authors.

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