Gender Dynamics in Video Game Use: usage patterns, parental control, motivations, and effects in spanish adolescents

Dinámicas de género en el uso de videojuegos: patrones de uso, control parental, motivaciones y efectos en adolescentes españoles

Authors

Manuel Isorna Folgar [1]
María Dolores Dapía Conde [1]
José M Faílde Garrido [1]
Millán Brea-Castro [1]
Paula Rodríguez-Rivera[1]

[1] University of Vigo (Spain)

Corresponding author:
ddapia@uvigo.es

How to cite in APA

Isorna Folgar, M., Dapía Conde, M. D., Faílde Garrido, J. M., Brea-Castro, M., & Rodríguez Rivera, P. (2025). Gender Dynamics in Video Game Use: usage patterns, parental control, motivations, and effects in spanish adolescents. *Retos*, *63*. https://doi.org/10.47197/retos.v63.109572

Abstract

Introduction: Video game usage among adolescents has become a focal area of study due to its impact on development and social behaviors. Gender differences in gaming engagement and parental control raise questions about tailored intervention needs.
Objective: This study aimed to examine video game usage patterns, motivations, parental controls, and problematic use among Spanish adolescents aged 12-20, while exploring gender-specific differences to identify potential areas for targeted interventions.
Methodology: A sample of 2567 Spanish adolescents (M=14.89; SD=1.90) participated in a survey-based study assessing gaming habits, parental control, motivations for gaming, and indicators of problematic use.
Results: The findings revealed significant gender differences: male adolescents reported higher gaming involvement, spending more time and money on video games, and engaged more in online gambling, which correlated with increased problem gambling rates. In contrast, female adolescents reported experiencing greater parental control and supervision regarding their gaming activities.
Discussion: These findings align with previous studies suggesting that male adolescents are more likely to engage heavily in gaming and gambling behaviors, while females are subject to more parental oversight. Such gender-specific patterns suggest different motivations and social dynamics in gaming among adolescents.
Conclusions: This study highlights the necessity for gender-responsive strategies to promote healthy gaming habits among adolescents. Interventions should consider these distinct patterns to effectively mitigate potential risks associated with excessive or problematic gaming behaviors, emphasizing a balanced approach tailored to the unique needs of male and female gamers.

Keywords

Video games; adolescence; gender; gambling; parental control.

Resumen

Introducción: El uso de videojuegos en adolescentes ha captado la atención de investigadores por su impacto en el desarrollo y los comportamientos sociales. Las diferencias de género en el compromiso con los videojuegos y el control parental sugieren la necesidad de intervenciones adaptadas.
Objetivo: Este estudio tuvo como objetivo examinar los patrones de uso de videojuegos, las motivaciones, el control parental y el uso problemático entre adolescentes españoles de 12 a 20 años, explorando diferencias específicas por género para identificar áreas clave para intervenciones dirigidas.
Metodología: Se llevó a cabo un estudio basado en encuestas en una muestra de 2567 adolescentes españoles (M=14.89; SD=1.90), evaluando sus hábitos de juego, el control parental sobre estos, las motivaciones para jugar y los indicadores de uso problemático.
Resultados: Los resultados mostraron diferencias significativas según el género: los adolescentes varones presentaron una mayor implicación en los videojuegos, dedicando más tiempo y dinero y participando en juegos de azar en línea, lo que se asoció con mayores tasas de juego problemático. Las adolescentes, en cambio, reportaron niveles más altos de supervisión y control parental en sus actividades de juego.
Discusión: Estos hallazgos coinciden con estudios previos que sugieren que los adolescentes varones tienden a participar de forma más intensa en videojuegos y juegos de azar, mientras que las mujeres experimentan una mayor vigilancia parental. Las diferencias de género resaltan motivaciones y dinámicas sociales distintas en el uso de videojuegos entre adolescentes.
Conclusiones: Este estudio subraya la importancia de desarrollar intervenciones adaptadas al género para fomentar prácticas de juego saludables en adolescentes, abordando los riesgos asociados al juego excesivo de manera efectiva y según las necesidades específicas de cada género.

Palabras clave

Videojuegos; adolescencia; género; juego; control parental.

Introduction

According to the economic report, which analyzes the impact of the video game industry in Spain, it represents 0.11% of the Spanish GDP. The video game industry directly employs 9,000 people, with a total impact of the sector on the economy of 3,577 million euros (Spanish Video Game Association [AEVI], 2018). In Spain, the number of users is close to 16 million video gamers, with the practice of video games among adolescents aged 12 to 18 years almost universal, although the prevalence decreases with age (12-13 years: 91.3%; 14-18 years: 83.1%). This decline is especially pronounced among girls (84% among 12–13-year-olds and 69.7% among 14-18 year olds) (Spanish Observatory on Drugs and Addictions [OEDA], 2023).

Video games can have positive effects on the development of cognitive and motor skills. Studies have shown that they can improve visual perception, reaction speed, creativity, attention, and executive functions (Nuyens et al., 2019; Arufe et al., 2021). However, excessive use of video games can have negative consequences (Faílde et al., 2024). It can interfere with the academic, family, social and work relationships of players (de la Torre-Luque & Valero-Aguayo, 2013; Mathur & VanderWeele, 2019). In addition, intensive use of video games has been linked to vision and sleep problems (Mylona et al., 2020; Hale & Guan, 2015), and poorer eating habits, increased sedentary lifestyles (Estrada et al., 2024). Furthermore, recent studies have evaluated problematic video game use in adolescents, highlighting differences in the impact of gaming on youth with and without ADHD, which suggests new recommendations for addressing this issue (Isorna et al., 2024).

The International Classification of Diseases ICD-11 (World Health Organization [WHO], 2018) described video game addiction disorder (IGD) as a persistent pattern of behavior, both in online and offline games. This disorder is characterized by a lack of control over gambling, prioritizing gambling over other activities, and continuing to play despite negative consequences. These characteristics are similar to the categories described in the DSM-5, which also recognizes IGD as a disorder that needs further study (American Psychiatric Association [APA], 2013).

The use of video games has increasingly been recognized as a potential public health issue over the past decade, with Spain's National Plan on Drugs (PNSD) incorporating video games into its 2017-2024 national strategy on addictions, alongside gambling. The ESTUDES survey (OEDA, 2023) highlights notable patterns in video game use among adolescents aged 12 to 18, revealing that boys play more frequently and spend more money across all age groups to improve their standing in the game, customize their character, and acquire accessories. Although female participation in video gaming is on the rise, approximately 8.5 million women played in Spain in 2021, representing 47% of all players (AEVI, 2023), significant gender differences persist. According to gender socialization theory, women tend to gravitate toward less competitive games and may lack confidence in their gaming abilities, shaped by cultural expectations that perceive them as less skilled in this area (Santos et al., 2020).

Historically, the video game industry has been dominated by men, mostly young, white, and heterosexual (Murray, 2019). This domination has generated a series of social differences that have influenced gender roles, resulting in lower visibility of women due to structural changes in the game's narrative and character representations (Dill & Thill, 2007; Vilasis-Pamos & Pires, 2021). Gender stereotypes, including the hypersexualization of female characters and violence towards women, have contributed to the objectification of women in the video game industry. This patriarchal representation has created male market niches, which has led to differences in media consumption practices and has formed group identities with a marked gender bias, such as that of gamers (Cote, 2018; Wohn et al., 2020; Kaye & Pennington, 2016).

Despite advances in female participation in video game culture, stereotypes persist that underestimate women's skills in this field, considering them less dedicated than men (Gestos et al., 2018; González-Sancho & Reyes, 2020; Paaßen et al., 2017; Ruvalcaba et al., 2018; Siutila & Havaste, 2019; Yao et al., 2022). These stereotypes can influence the socialization of players and affect their performance and participation in events (López-Fernández et al., 2019; Siutila & Havaste, 2019; Yao et al., 2020). In addition, women are often perceived as having different motivations for gaming, such as fighting boredom or seeking entertainment, which can limit their participation and performance in the field of video games (Rogstad & Skauge, 2022; Wohn et al., 2020).

The identification of a sexist vision and practice in the 1990s, as pointed out in the review by Kirkpatrick (2013), contrasts with the current reality. Both men and women show similar motivations to participate in a wide variety of video games (AEVI Yearbook, 2023). A study in Spain carried out by Deloitte and Liga de Videojuegos Profesional (2022) reveals that the typical profile of e-sports fans is similar between men and women, with an average age of 24 years, single, higher education, and a low affinity for television. Likewise, highlights that almost half of the people who play video games identified as women in 2020, indicating an increasing trend year after year. This increase is not only reflected in the number of women who play, but also in the time spent, especially in the use of consoles, where a significant increase was recorded during confinement and has been maintained in recent quarters (Barr & Copeland-Stewart, 2022).

As for the motivations for play, we can consider those described by Yee (2008) and Fuster et al. (2014) for Massive Multiplayer Online Role Playing Games (MMORPGs), which are divided into three main categories: achievement (winning the game, competition), social interaction (team play, interacting with other players) and immersion (role-playing, escapism). Research suggests that men play more for achievement reasons, while female players are more interested in social interaction (Cole & Griffiths, 2007). According to Paaßen et al. (2017), women play more occasionally and are not considered players as such, while men identify with gamer communities and participate in tournaments and competitions. This difference may be related to existing social expectations and stereotypes, which exclude girls from gaming communities (Afonso & Aguilera, 2021). Therefore, the video-game sector is a field with a social rather than a physical barrier (Urbaneja et al., 2023).

In this context, and in order to contribute to the understanding of video game use from a gender perspective in school-going adolescents, this study has the following objectives:

To explore the patterns of video game use among adolescents, differentiating by gender.

To analyze the parental control exercised over video game use, evaluating possible gender differences.

To identify adolescents' motivations for video game use and how these vary by gender.

To examine levels of passion—both harmonious and obsessive—and their relationship to problematic use in adolescents.

By addressing these objectives, this study seeks not only to deepen our understanding of adolescent video game use by gender but also to provide recommendations for designing prevention and intervention strategies. These strategies will focus on promoting gender equity and enhancing the understanding of gender dynamics for families, educators, and young users in the context of video game culture.

Method

Participants

In the 2022-23 academic year, the autonomous community of Galicia had almost 90,000 students enrolled in different levels of secondary education, according to data provided by the Ministry of Education of the Xunta de Galicia. For this study, a representative sample of 2,671 students was selected through multistage probability cluster sampling.

First, the sample size was determined at the provincial level, respecting the quotas of the secondary school population. The first-level units, the educational centers, were randomly selected, stratified by character (private or public subsidised private/public) and location (rural/urban) to reflect the population distribution. In the second stage, the classrooms within the selected schools were randomly selected, using quota sampling according to the educational cycle.

The final sample, after excluding 104 cases, consisted of 2,567 students, with a mean age of 14.89 years (SD = 1.90), and an age range between 12 and 20 years. These students came from different levels of secondary education, including Compulsory Secondary Education (ESO), High School and training cycles. Of the total participants, 51.0% identified as male, 48.1% as female, and 0.9% as non-binary gender. Since gender is a central variable of interest in this study, only the categories of boy and girl

were considered for empirical analyses, excluding people of non-binary gender due to their low representation (23 cases).

Regarding the distribution by educational stages, 72.6% of the participants were enrolled in ESO, 17.9% in Baccalaureate, and 9.5% in Vocational Training.

Procedure

The administration of the tests was carried out by members of the research team, who have extensive experience in this type of task. The tests were carried out in groups in the classrooms of the schools that were randomly selected as part of the sample. Before the administration of the tests, the authorization of the centers was obtained and the date and time for their application were agreed. In addition, for minors, permission and informed consent were requested from the parents, through the management of the centers. The questionnaires were administered by individually completing the tests on paper.

The study was approved by the Ethics Committee of the Doctoral Program in Educational and Behavioural Sciences (CE-DCEC-UVIGO-2022-10-04- 5109). This authorization guarantees that the study complies with the ethical principles included in the Declaration of Helsinki, for studies with human beings.

At the beginning of each session, all participants were informed about the objectives of the research and were asked to collaborate sincerely and anonymously. The rejection rate was 1.5%. The time required to complete the tests ranged from 30 to 45 minutes.

Instruments

For data collection, a battery of instruments was administered via survey, detailed below:

Structured questionnaire designed ad hoc: This questionnaire, composed of closed questions, addressed the practices of using video games. The questions were based on a thorough literature review and included information on time of use (during the week and weekend), game mode (online vs offline), devices used, and perceived parental controls. In addition, a block was included where participants had to select the video games used, choosing from a wide list with commercial names. This questionnaire was validated by four computer and video game experts, who made minor adjustments. Subsequently, a pilot test with 50 adolescents allowed some items to be terminologically adjusted.

Video Game Related Experiences Questionnaire [CERV] (Chamarro et al., 2014): This instrument, composed of 17 items in 4-point Likert format (never/almost never, sometimes, quite a few times and almost always), assesses the problematic use of video games. It allows you to obtain a total score and two subscales: avoidance (8 items) and negative consequences (9 items). Cluster analyses identify three groups according to cut-off points: no problems (17-25 points), potential problems (26-38 points), and severe problems (39-68 points). In this study, Cronbach's alpha was .89, indicating adequate internal consistency.

Videogaming Motives Questionnaire (VMQ): Developed and validated by López-Fernández et al. (2020), this questionnaire assesses the underlying reasons for video game use. It consists of 24 items, answered on a 5-point Likert scale (1 = not at all agree, 5 = strongly agree), grouped into eight subscales: recreation, competition, cognitive development, coping, social interaction, violent reward, personalization and fantasy. Cronbach's alpha for these subscales in the present study was: .88, .78, .75, .89, .70, .86, .88, and .84, respectively.

Spanish version of the Passion Scale (adapted to video games) (Chamorro et al., 2015): This scale, made up of 17 items with seven response options (from strongly agree to strongly disagree), assesses passion for video games in two dimensions: obsessive passion (OP, 6 items) and harmonious passion (HP, 6 items), as well as passion criteria (5 items). In this study, Cronbach's alpha was .72 for HP, .74 for OP and .92 for passion criteria, indicating adequate internal consistency.

Sociodemographic data: Data were collected on age, sex, academic year, school performance and family situation.

Design

This is a cross-sectional, descriptive observational study that seeks to take a still photo at a specific moment in time, using the survey of secondary school children as a data collection technique. The independent variable was sex and the patterns of use of video games as well as the type of player were considered as dependent variables, based on the cut-off scores of the Questionnaire of Experiences Related to Video Games (CERV) establishing three levels (Chamarro et al., 2014): non-problematic use (NPUVG); potentially problematic use (PPUVG); and severe or possibly addictive problematic use (AUVG).

Data analysis

The initial number of questionnaires collected was 2,671, although after a demanding process of review and refinement, 104 were rejected, either because they were incomplete, because of the inconsistency of the answers, because they distorted the established quotas or because they were identified as binary gender.

The 2,567 questionnaires were analyzed, using the SPSS 24.0 statistical package (IBM Corp., 2020). In this analysis, statistics of central tendency and dispersion (means, standard deviations), frequencies and percentages were used. Prior to the contrast of variables, the Shapiro-Wilk test was used to verify the assumption of normality. For the contrast of variables, the chi-square statistic was used, when the variables were classification, and the Wilcoxon sum of ranks test (Mann Whitney's U), a non-parametic alternative to ANOVA, as the assumption of normality in quantitative variables was not met.

Results

The results of the study reveal significant differences in the use of video games between male and female adolescents, as shown in Table 1. In terms of time spent playing video games during the week (Monday to Thursday), men spend more time than women, with a statistically significant difference (X^2= 195.22; p<.001). This pattern is maintained during the weekend (X^2= 582.57; p<.001) and in the total weekly time (X^2= 396.17; p<.001). Although the most common category of playtime from Monday to Thursday is 0 to 2 hours for both genders, boys have higher percentages in the categories that indicate greater dedication. During the weekend, most males play 6 or more hours, while most females are still in the 0-2 hour category.

Regarding the economic expenditure related to the use of video games, a statistically significant association with gender was also observed (X^2= 82.17; p<.001). Only 2.6% of women spend more than €10 per month on video games, compared to 12.3% of men. In addition, 3.3% of men invest more than €51 per month, compared to 0.6% of women.

The game mode shows significant differences according to gender (X^2 = 161.31; p<.001). Although both genders prefer to play online, this modality is more common among males. On the other hand, women tend to play more offline, both alone (35.9%) and with friends (6.5%).

Regarding the potential problems derived from the use of video games, evaluated using the CER scale, a statistically significant association with gender was found (X^2= 403.08; p<.001). The majority of women (79.6%) report non-problematic use of video games. However, 64.4% of males indicate use that carries potential or severe problems, in contrast to only 20.3% of females.

Finally, there are significant differences in the preference for the type of device used to play (Table 1). Women prefer to use mobile phones (62.5%) to play games, using, not so much, other devices such as computers and tablets. On the other hand, men show a preference distributed between mobile phones (41.4%) and computers (38.1%). Tablets and other devices are less used by both genders.

The results of the typology of games (Table 2) reveal differential patterns according to gender. Adolescent boys show higher participation in categories such as Shooters (X^2=521.40, p<.001), Open World Games (X^2=97.41, p<.001), Sports and Racing (X^2=69.83, p<.001), and Strategy (X^2=43.62, p<.001). On the contrary, girls prefer to play Casual games (X^2=157.14, p<.001).

When analyzing the most used games, statistically significant associations between genres are observed in most cases, aligning with the trends observed in the types of games. For example, girls tend to play games such as Among Us (36.4%), Animal Crossing (23.3%), and Mario Kart (23.2%) significantly more than boys, all of which are open-world, simulation, or racing games that encourage cooperation and require less concentration.

On the other hand, among men, the most popular game is Fortnite (46.7%), followed by other open-world games such as GTA (38.2%) or Minecraft (31.2%), as well as sports games such as FIFA 21 (28.1%).

Table 1. Time and money invested in video games, gameplay and levels of problematic use

	Men N (%)	Women N (%)	Chi-Square	Sig
Weekly Frequency				
0 – 2 Hours	791 (59.9)	1048 (84.0)	195.22	.000
3 – 5 Hours	295 (22.3)	142 (11.4)		
6 or more hours	234 (17.8)	57(4.6)		
Weekend Frequency				
0 – 2 Hours	336 (25.7)	873 (71.8)	582.57	.000
3 – 5 Hours	433 (33.2)	238 (19.6)		
6 or more hours	536 (41.1)	105 (8.6)		
Total Playtime				
0 – 2 hours	532 (41.3)	961 (80.0)	396.17	.000
3 – 5 hours	448 (34.8)	175 (14.5)		
6 or more hours	307 (23.9)	66 (5.5)		
Money per month				
Between 0 – 10 €	1133 (87.7)	1131 (97.4)	82.17	.000
Between 11€ and 50€	117 (9.0)	23 (2.0)		
More than 51 €	43 (3.3)	7 (0.6)		
Game Mode				
Online with friends	872 (72.8)	439 (47.1)	161.31	.000
Online with strangers	95 (7.9)	97 (10.4)		
Offline solo	178 (14.9)	335 (35.9)		
Offline with friends	52 (4.3)	61 (6.5)		
Problematic Use (CERV)				
No problems	445 (38.6)	911 (79.6)	403.08	.000
Potential Problems	607 (52.6)	212 (18.5)		
Severe problems	101 (8.8)	21 (1.8)		
	Devices used for the game			
Computers	500 (38.1)	258 (22.0)	76.09	.000
Tablet	82 (6.2)	166 (14.1)	43.03	.000
Mobile	519 (41.4)	734 (62.5)	131.08	.000
Other	25 (1.9)	21 (1.8)	0.04	.831

Table 2. Types of games and most played games according to genre (frequencies and percentages)

Types of games	Men	Women	Chi-Square	Sig
	N (%)	N (%)		
Estrategy (E)	503(38.4)	303 (26.2)	43,625	.000
Shooters (SH)	806 (61.5)	189 (16.4)	521,403	.000
Casual Games (JC)	166 (12.7)	389 (33.8)	157,141	.000
Simulation (SI)	286 (21.8)	299 (25.9)	6,369	.095
Open World Games (JMA)	641 (51.1)	342 (29.6)	97,413	.000
Sports & Racing (D&C)	657 (50.1)	390 (33.8)	69,832	.000
Other				
Most Played Games				
E-League of Legend	147 (11.1)	48 (3.9)	48,708	.000
E-DOTA 2	6 (0.5)	1 (0.1)	3,312	.346
E-Clash of Clans	239 (18.1)	72 (5.8)	98,768	.000
SH-Fornite	616 (46.7)	220 (17.7)	247,107	.000
SH-Destinity 2	25 (1.9)	5 (0.4)	12,407	.006
SH-Valorant	137 (10.4)	16 (1.3)	109,878	.000
SH-CrossFire	3 (0.2)	1 (0.1)	,895	.827
SH-Apex Legends	83 (6.3)	12 (1.0)	51,144	.000
SH-Counter Strike Go	140 (10.6)	10 (0.8)	127,479	.000
SH-Call of Duty	302 (22.9)	133 (10.7)	72,973	.000
SH-PUGB	49 (3.7)	26 (2.1)	6,049	.109
JC- Among Us	198 (15)	454 (36.4)	155,906	.000
JC-Fall Guys	83 (6.3)	61 (4.9)	2,480	.479
SI-Animal Crossing	73 (5.5)	290 (23.3)	166,409	.000
JMA-GTA	504 (38.2)	174 (14)	196,755	.000

JMA-Minecraft	412 (31.2)	249 (20)	45,611	.000
JMA-Read Dead Redemption 2	102 (7.7)	20 (1.6)	52,252	.000
D&C-Mario Kart 8	81 (6.1)	289 (23.2)	151,382	.000
D&C-Fifa 20	146 (11.1)	72 (5.8)	23,263	.000
D&C-Fifa 21	371 (28.1)	74 (5.9)	224,704	.000
Other	82 (6.2)	21 (1.7)	57,579	.000

The data presented in Table 3 reveal statistically significant associations between parental control over video game use and the gender of the adolescents in the sample (χ^2= 82.80; p<.01). It is observed that fathers tend to exert greater control over daughters (65.2%) compared to sons (50.5%), with the total lack of supervision being more frequent in male adolescents (33.6%) than in girls (18.2%). In addition, a statistically significant association is identified between the interest of parents in the type of games their children use and their gender (χ^2= 36.82; p<.01), indicating greater parental supervision when it comes to a daughter compared to a son. However, it is noteworthy that the percentage of lack of parental supervision is still remarkably high, both in girls (32.2%) and boys (43.8%).

Regarding the follow-up of the recommendations of the PEGI (Pan European Game Information) system, a statistically significant association was found according to gender (χ^2= 232.98; p<.01). It is striking that boys follow the PEGI recommendations to a greater extent, while 81.9% of girls do not respect them or do not pay attention to them when choosing the type of video game. This finding suggests significant differences in the perception and adherence to age classification patterns between male and female adolescents.

Table 3. Parental control by playtime, monitoring of the type of game and monitoring of PEGI recommendations by users

Parental Time Control	Men N (%)	Women N (%)	Chi-Square	Sig
Yes, always	666 (50.5)	813 (65.2)	82.80	.000
Sometimes	210 (15.9)	207 (16.6)		
No, never	444 (33.6)	227 (18.2)		
Game Type Monitoring				
Always	561 (42.5)	644 (51.6)	36.82	.000
Sometimes	181 (13.7)	202 (16.2)		
No, never	578 (43.8)	401 (32.2)		
Respects PEGI recommendations*				
Yes	578 (44.9)	195 (18.1)	232.98	.000
No	235 (18.3)	434 (40.3)		
I don't pay attention to the recommendations	473 (36.8)	448 (41.6)		

Nota: (*) Pan European Game Information

The results presented in Table 4 reveal statistically significant associations, according to gender, in all dimensions of the Reasons for Playing Video Games Questionnaire (VMQ), with higher scores in males. It is highlighted that, for both genders, the main motivation for the use of video games is recreation, while violent reward is the least cited motivation.

On the other hand, it is observed that potentially problematic use and with severe problems differs significantly between groups. Males have significantly higher scores than girls in potentially problematic use (U=306994.50, p<.001), use with severe problems (U=361115.50, p<.001), and in the total score of the Questionnaire of Experiences Related to Video Games (CERV) (U=281185.50, p<.001). These findings suggest a greater propensity of adolescent boys to develop problems related to video game use compared to female adolescents.

Table 4. Motivations for using video games, problematic use, and passion for video games as a function of gender (Mann-Whiney U statistic)

	Males (n =1320) M (SD)	Women (n = 1247) M (SD)	*U*	*Sig*	*g+*
Recreation	10.15 (2.50)	8.72 (2.99)	290815.00	.000	-0.520
Competition	8.29 (3.06)	6.05 (3.23)	247332.00	.000	-0.712
Cognitive development	5.55 (3.24)	3.60 (2.93)	263013.00	.000	-0.630
Coping	6.02 (3.67)	3.61 (2.66)	502303.50	.000	-0.748
Social Interaction	5.82 (3.24)	3.59 (3.06)	245107.50	.000	-0.707
Violent Reward	4.89 (3.68)	2.47 (3.23)	236835.50	.000	-0.697
Customization	7.19 (3.73)	6.92 (3.76)	388968.00	.000	-0.072
Fantasy	6.43 (3.65)	5.47 (3.84)	344509.50	.000	-0.256

CERV-Psychological Dependence and Evasion	14.73 (4.51)	10.85 (3.56)	306944.50	.000	-0.952
CERV-Negative Consequences of Use	13.70 (3.58)	10.97 (2.76)	361115.50	.000	-0,851
CERV-Overall Score	28.32 (7.43)	21.70 (5.96)	281185.50	.000	-0,815
Harmonious Passion	9.73 (2.79)	7.50 (2.18)	406632.00	.000	-0.887
Obsessive Passion	10.49 (3.02)	7.96 (2.50)	374952.00	.000	-0.910

Finally, girls and boys differ in the levels of passion associated with the use of video games. Males obtained significantly higher scores in both harmonious passion (U=406632.00, p<.001), and obsessive passion (U=374952.00, p<.001).

Discussion and Conclusions

The conclusions obtained from this study reveal an intriguing dynamic in the relationship between gender and video game use among adolescents. A clear increase in play time during weekends is observed, especially among adolescent boys, coinciding with the release of school responsibilities. This phenomenon reflects the prominence of video games among adolescents and its potential implications on academic performance and interpersonal relationships, especially for those who spend more than two hours a day on this activity (Newzoo, 2018; Gómez-Gonzalvo, 2020; Ameneiros & Ricoy, 2015).

In addition, notable gender differences in terms of monthly spending and gambling preferences are highlighted. Male adolescents tend to spend more frequently and heavily, preferring online modalities in the company of friends, while adolescent girls show an inclination towards solo and offline games. This disparity reflects an entrenched gamer culture that continues to associate gaming with masculinity, which can exclude or marginalize women who do not conform to the stereotype of the "hardcore gamer" (Zendle et al., 2019; Kuss et al., 2022; Shaw, 2012; Vermeulen et al., 2017). Consequently, this divergence in the game profile is also reflected in a higher incidence of problems derived from the use of video games among male adolescents. Previous research has also identified significantly higher rates of potential and severe problems in this group compared to women (Andrade et al., 2021; Spanish Observatory on Drugs & Addictions, 2022). This trend is linked to the social construction of a highly masculinized gamer identity, which promotes competitiveness and extreme dedication to the game as desirable traits (López-Fernández et al., 2021; Paulus et al., 2018; Ricoy & Ameneiros, 2016; Paaßen et al., 2017; Rial-Boubeta, 2024).

It is essential to consider the clinical implications of these findings, given that inappropriate use of video games has led to the inclusion of the diagnostic category "video game use disorder" in the ICD-11. Therefore, addressing these issues from a gender perspective is critical to better understand the underlying dynamics and develop appropriate interventions that address the specific needs of adolescents (WHO, 2018; Andrade et al., 2021).

The personality characteristics of adolescents can significantly influence their relationship with video games, which can increase the risk of abusive or addictive use. In this sense, those who tend to experience negative emotions, such as anxiety or depression or low self-esteem, may use video games as a way to deal with these feelings. This can result in a cycle of dependence, where playing time becomes an unhealthy coping mechanism (Kuss & Griffiths, 2012; Lemmens et al., 2011). In addition, adolescents who lack self-regulation may have difficulty setting limits on their playing time, which can lead to problematic use. Impulsivity, a characteristic associated with this personality dimension, has been linked to an increased risk of video game addiction (Kuss & Griffiths, 2012).

In turn, excessive use of video games can also affect the personality and social behavior of young people. In this sense, adolescents who spend too much time gaming may neglect social interactions in the real world, which can lead to socialization problems, social isolation, and even unwanted loneliness. This can reinforce the dependence on video games as a primary source of interaction (Gentile et al., 2009). Furthermore, excessive use of video games can alter adolescents' perception of interpersonal relationships, developing a distorted view of social norms and communication skills, favored by gaming environments that lack the complexities of face-to-face interactions (Lemmens et al., 2011). On the other hand, spending too much time in virtual worlds can cause some adolescents to identify more with their

avatars or characters in the game than with their own identity, which can hinder the development of a healthy and balanced self-image (Bányai et al., 2017).

In the context of the second objective of this study, the levels of parental supervision and control in relation to compliance with the PEGI recommendations were investigated. There is a significant disparity between perceptions of parental supervision between adolescents of different genders, with adolescent girls reporting a higher degree of parental control compared to male adolescents (Hwang et al., 2020; Jeong et al., 2020). This difference highlights the influence of parenting styles on the symptoms associated with video game addiction, underscoring the importance of parental involvement in the prevention and mitigation of problems arising from problematic video game use (Chen et al., 2020). However, it is worrying that almost half of adolescents do not pay attention to the recommendations of the PEGI, opting for games with violent and/or sexist content (Lloret et al., 2013).

It is particularly striking that it is adolescent girls who are more likely to report not respecting or not paying attention to such recommendations. However, the reasons why girls may pay less attention to such recommendations are complex and multifaceted, as social, cultural and personal dynamics play a significant role in the way different genders interact with video games and their respective ratings. On the one hand, girls tend to be less interested in video game genres that often have more restrictive PEGI ratings, such as action games or first-person shooters, showing greater interest in simulation and role-playing games, which generally have less controversial content (Gentile et al., 2004). On the other hand, girls may not perceive certain content as problematic; in this sense, a study by Valkenburg and Peter (2011) indicates that the perception of risk associated with violent content in the media is often lower among girls, which may influence their decision to ignore PEGI recommendations. Previous studies have shown that adolescents exposed to video games with high violent content are more likely to internalize antisocial values and engage in bullying behaviors (López-Gómez et al., 2022; Teng et al., 2022; Rial-Boubeta et al., 2024), which highlights the need for awareness and effective application of game classification recommendations by parents and caregivers.

In relation to the third objective, our results are consistent with previous research in revealing a marked gender disparity in video game preferences (Rehbein et al., 2016; López-Fernández et al., 2020). Adolescent boys show a clear inclination towards genres such as strategy, shooters, open-world games and racing sports. These games, which offer an open-world environment, with freedom of action and elements of adventure and violence, are particularly valued by men, who find the experiences of fictional power and the intense emotions they offer attractive. In contrast, teenage girls show a preference for games like Among Us, Animal Crossing, or Mario Kart 8, with a simple interface and focused on strategy. Although they find the familiarity offered by these games attractive, they do not show the same interest as men towards titles with more violent content such as GTA (Afonso et al., 2020; Calderón & Gómez, 2022; Paaßen et al., 2017). In summary, there is evidence of a greater preference among women for single-player games and focused on casual games, while men show an inclination towards online multiplayer video games and action, shooter and adventure genres.

On the other hand, the study reveals that male adolescents exhibit higher levels of motivation in various dimensions related to video games, such as recreation, competition, cognitive development, social interaction, among others, compared to adolescents. These findings support previous research that has also highlighted gender differences in motivations for playing and the degree of engagement with video games (Lopez-Fernandez et al., 2019; Siutila & Havaste, 2019). However, it is important to note that women who participate in video game culture face significant challenges related to the perception of their own participation. They are often less recognized as "true players" and are attributed with motivations other than men, such as fighting boredom or seeking entertainment. This stigma can negatively influence their performance and participation in events, even leading them to drop out of competition or limit themselves to women-only events (Rogstad & Skauge, 2022). In addition, gender stereotypes are consistent, which underestimate women's skills in video games, considering them less applied and dedicated than men. Although these stereotypes may be decreasing, they still influence players' socialization (Gestos et al., 2018; González-Sancho & Reyes, 2020; Paaßen et al., 2017; Ruvalcaba et al., 2018; Siutila & Havaste, 2019; Yao et al., 2022; Yusoff & Yunus, 2021).

Finally, in terms of levels of passion for video games, previous research suggests that gamers *are* attracted to and reinforced by achievement and socialization, and that harmonic passion can influence social, exploration, and achievement motivation in a controlled and flexible way. At the same time,

harmonic passion has been observed to increase well-being and socialization and may even lead to concrete benefits such as improved impulsivity control (Chamoro et al., 2015; Vallerand et al., 2003). However, in our study we observed that male adolescents have higher levels of obsessive passion scores and greater dependence problems (psychological and avoidance, with greater negative consequences) compared to adolescents. This difference could be explained by greater intrapersonal or interpersonal pressure towards the performance of the activity among men, which leads them to devote more time and energy to video games, even at the expense of other important aspects of their lives. This greater obsessive passion among men may have implications for their well-being and overall functioning, highlighting the importance of addressing these gender differences in future research and in the formulation of interventions aimed at promoting non-problematic use of video games (Andreassen et al., 2016; Bertran & Chamarro, 2016; Puerta-Cortés et al., 2017; Fuster et al., 2014; Halbrook et al., 2019).

Taking into account the results of our study and the review of the literature (Cudo et al., 2020; Dill-Shackleford et al., 2007; Gentile et al., 2011; Przybylski & Weinstein, 2019; Salomatova, 2024; Santoniccolo et al., 2023; Wohn, et al., 2020), we point out a series of recommendations, taking into account the gender perspective, which we consider can contribute to improving the design and implementation of actions aimed at addressing the problem related to the problematic use of video games, among which we can highlight: 1) Promote inclusion and diversity, which would involve developing video games that positively and diversely represent characters of different genders, ethnicities and sexual orientations; 2) Educate about consent and gender-based violence by integrating themes that address these issues into video games, promoting narratives that question and challenge sexist stereotypes, that encourage respect and sensitize players about the importance of healthy relationships and the rejection of violent behavior; 3) Create safe gaming spaces, developing and promoting gaming platforms and communities that are inclusive and harassment-free, where all players can interact without fear of discrimination or abuse; 4) Encourage collaborative play, promoting game modes that encourage collaboration rather than competitiveness, in this sense, cooperative games can help build more positive relationships between players of different genders; 5) Raise awareness about playing time, develop educational actions aimed at players to raise awareness about the negative effects of excessive playing time and encourage healthy gaming habits that include breaks and physical activity; 6) Engage families in dialogue about video games to set healthy boundaries for their children's video game use; 7) Promote research into the impact of video games on different genders and delve deeper into the differential effects based on gender, using these findings to develop more effective intervention strategies; 8) Encourage adolescents to critically analyze video game content by teaching them to recognize and question potentially harmful or stereotypical gender messages; 9) Collaborate with gender experts to develop video game content and policies that take gender equality issues into account.

Limitations

One of the strengths of this study is that it has a representative and large sample of the population under study. As it is a cross-sectional study, which limits the conclusions that can be derived from it, so cause-effect relationships cannot be established and it would be advisable to deepen its analysis in future studies with larger samples and longitudinal or sequential designs. Finally, the fact that the data have been collected in the school context means that the variables analysed have been self-reported, so it is impossible to know with certainty to what extent adolescents may have really underestimated or overestimated the levels of video game use. However, other experts on addictive behaviors have already established that anonymous and confidential self-reported measures have proven to be reliable (Winters et al., 1990).

Financing

The authors of this work are grateful for the funding received through the Ourense Provincial Council through INOU2021 for the realization of this study.

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Authors' and translators' details:

Manuel Isorna Folgar	isorna.catoira@uvigo.es	Author
María Dolores Dapía Conde	ddapia@uvigo.es	Author
José M Faílde Garrido	jfailde@uvigo.es	Author
Millán Brea-Castro	millan@uvigo.gal	Author
Paula Rodríguez-Rivera	paula.rodriguez.rivera@uvigo.gal	Author
Carlos de Paula Prieto	myenglishteachercarlos@hotmail.com	Translator