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Impact of prolonged video game use on high school students in Duitama, Colombia

Incidencia del uso prolongado de videojuegos en estudiantes de educación secundaria y media de Duitama, Colombia

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SUMMARY

Background: *Video game addiction is a growing problem among adolescents. This study aims to assess the level of video game addiction among middle and high school students at three public schools in Duitama, Colombia.* **Methods**. *A descriptive study was conducted, in which the Video Game Dependence Test (VDT) was administered to 885 students.* **Results**. *78.1% of participants showed a low level of addiction, although cases with moderate and high levels were identified that could affect emotional well-being. A higher prevalence was also observed among males, particularly between ages 14 and 17.* **Conclusions**. *It is necessary to implement institutional strategies for early detection and awareness-raising within the educational community to promote responsible video game use and prevent addictive behaviors.*

Keywords: *Video game addiction, adolescents, basic secondary and middle education*

RESUMEN

Introducción: *La adicción a los videojuegos es un problema creciente entre los adolescentes. El presente estudio tiene como objetivo identificar el nivel de adicción a los videojuegos en estudiantes de educación básica, secundaria y media de tres instituciones públicas de Duitama, Colombia.* **Métodos**. *Se llevó a cabo un estudio descriptivo en el que se aplicó la prueba de dependencia de los videojuegos (TDV) a 885 estudiantes.* **Resultados**. *El 78,1 % de los participantes presentó un nivel bajo de adicción, aunque se identificaron casos con niveles moderados y altos que podrían afectar el bienestar emocional. Asimismo, se observó una mayor prevalencia en el género masculino, especialmente entre los 14 y los 17 años.* **Conclusiones**. *Es necesario implementar estrategias institucionales de detección temprana y de sensibilización dirigidas a la comunidad educativa para promover el uso responsable de los videojuegos y prevenir conductas adictivas.*

Palabras clave: *Adicción a los videojuegos, adolescentes, educación básica, secundaria y media*

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INTRODUCTION

The rapid expansion of the video game industry over the past decade has marked a structural transformation in digital entertainment consumption, incorporating not only adolescents but also a growing population of young adults. According to González-Caino and Resett (1), the sector has experienced sustained global growth,

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largely driven by the widespread accessibility of video games through mobile devices, consoles, desktop computers, and laptops. Notwithstanding these advances, Abbasi et al. (2) caution that excessive engagement with video games may adversely affect fundamental cognitive processes, including perception, attention, memory, and decision-making. In a similar vein, Estrada-Araoz (3) emphasizes that, among adolescents and young adults, excessive participation in this form of entertainment may foster compulsive patterns of use and the development of addictive behaviors.

The growing clinical and social concern surrounding this phenomenon has prompted institutional responses. The American Psychiatric Association (4) incorporated Internet Gaming Disorder into the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5-TR) as a condition warranting further clinical study. Likewise, the World Health Organization (WHO) formally recognized Gaming Disorder as a mental health condition through its inclusion in the *International Classification of Diseases* (ICD-11), representing a significant milestone in the conceptualization and classification of behavioral addictions (5).

Recent empirical research has examined the prevalence and correlates of video game addiction among adolescent populations. Estrada-Araoz (3), in a study of third-, fourth-, and fifth-year secondary school students in Cusco, Peru, identified significant associations between problematic video game use, gender, and time spent gaming. Similarly, Campo-Pereira (6) analyzed the role of differential gender socialization in shaping patterns of video game use. These studies consistently report a higher prevalence of video game addiction among males, as well as age- and genre-related differences in gaming behaviors.

The relationship between video game use and emotional competencies further underscores adolescents' vulnerability within increasingly digitized environments. Sánchez-Domínguez et al. (7) report that approximately 90% of adolescents engage in video game-related activities, with earlier initiation and greater frequency observed among males, potentially increasing their susceptibility to pathological patterns of use. Nevertheless, the psychological and behavioral impact of video games appears to vary with context and purpose of use, as well as individual characteristics.

Although developmental and gender-related factors shape recreational motives, they predominate in adolescent gamers' decision-making processes. Younger adolescents (12–14 years) demonstrate higher levels of dependence compared to older cohorts (8). Moreover, evidence suggests that males exhibit a stronger preference for competitive and aggressive genres, whereas females tend to favor social simulation and logic-based games (9). These findings highlight the importance of examining how motivations, preferences, and engagement patterns differ across gender identities.

High levels of video game dependence have also been associated with deficits in social skill development among adolescents who engage in daily electronic device use (10). Furthermore, López-Fernández et al. (9) report that certain patterns of video game use may be linked to increased hostility and aggressive attitudes. Aggression, in turn, may interfere with the development of emotional regulation, stress management, impulse control, and empathic capacity (11, 12).

In light of these considerations, the present study seeks to determine the level of video game addiction among middle and high school students enrolled in three public educational institutions in Duitama, Colombia. By identifying the prevalence and associated characteristics of this phenomenon, the findings are expected to inform institutional decision-making and contribute to the development of evidence-based public policies to mitigate the adverse effects of problematic video game use among adolescents.

METHODS

Research Design

This study was conducted under a quantitative research paradigm, employing numerical data and statistical procedures to objectively describe, explain, and predict the phenomenon under investigation (13). Quantitative methodology is distinguished by its systematic rigor and precision in operationalizing and measuring variables, facilitating the generation of replicable and generalizable findings (14). The research adopted a descriptive, cross-sectional design to identify and characterize the principal attributes of the study population at a specific point in time (15). Specifically, the study examined the presence and manifestations of video game addiction among adolescent students in Duitama, Colombia, thereby contributing empirical evidence to a more comprehensive understanding of this phenomenon in the local educational context.

The sample was selected using non-probability convenience sampling, in which participants were recruited based on accessibility and willingness to participate (16). A total of 885 adolescents aged 10-20 years, enrolled in middle and high school, participated in the study. All participants attended three public educational institutions in Duitama, Colombia. Regarding gender distribution, 61.5% of participants identified as male and 38.5% as female. The majority (81.4%) resided in urban areas, while 18.6% reported living in rural settings.

Ethical procedures were conducted in accordance with Resolution 8430 of 1993, which governs scientific research in Colombia (17). As the study did not involve experimental manipulation or intervention, and no alterations were made to the study variables, it was classified as research without risk.

Data collection was conducted using an online questionnaire administered via Google Forms. The instrument consisted of two sections. The first section collected sociodemographic information, including sex, age, grade level, weekly hours spent on video games, and preferred video game genres.

The second section comprised the Video Game Dependence Test developed by Choliz and Marco (18), subsequently adapted and validated by Sánchez-Domínguez et al. (8). The scale contains 25 items rated on a five-point Likert-type scale ranging from 0 (“never”) to 4 (“almost always”). The items of the scale are distributed in 4 dimensions: Abstinence (3, 4, 6, 7, 10, 11, 13, 14, 21 and 25); use and tolerance (1, 5, 8, 9 and 12); problems caused by video games (16, 17, 19 and 23) and difficulty in control (2, 15, 18, 20, 22 and 24), whose scores are analyzed according to the 3 levels described in Table 1.

Table 1. Levels of addiction to video games

Scale	Range
Low	0-33
Moderate	34-67
High	68-100

Note. Data Collection Procedure and Data Analysis

Before data collection, formal authorization was obtained from the administrative authorities of the participating educational institutions. Subsequently, students distributed informed consent forms to parents or legal guardians, ensuring they were aware of the study’s objectives and that participation was voluntary. Once written informed consent and student assent were obtained, the questionnaire was administered in person in the computer laboratories of each institution. The administration process lasted approximately 30 minutes and was conducted under the researcher’s supervision to ensure standardized conditions.

Data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS) (19). In the first analytical phase, the instrument’s internal consistency was assessed using Cronbach’s alpha to confirm the scale’s reliability in the study sample. Following reliability verification, descriptive statistical analyses were performed, including frequencies, percentages, means, and standard deviations, to characterize patterns of video game use and levels of dependence.

RESULTS

Consumption Factors and Motivations in Video Game Use

Analysis of responses from 885 participants indicates that entertainment and enjoyment are the primary motivational factors for video game engagement, reported by 85.1% of the sample. This proportion substantially exceeds other reported motivations, such as escapism (7.2%), competition (5.1%), and socialization (2.6%), suggesting that recreational gratification predominates over socially or performance-oriented motives.

Regarding genre preferences, action games emerged as the most frequently selected category (32.9%), followed by adventure (15.0%) and sports (14.4%). This preference pattern is further reflected in the specific titles reported as those with the greatest time investment. Free Fire ranked first (36.3%), followed by Parcheesi (20.0%), and the combined category of PUBG and Roblox (17.7%). The prominence of these titles underscores a preference for competitive, fast-paced, and socially interactive digital environments.

Regarding technological access, a marked predominance of smartphones as the primary gaming device was observed, with 71.5% of participants reporting this. This contrasts considerably with the use of traditional platforms such as consoles (13.7%) and computers (13.4%), evidencing a consolidated shift toward mobile-based gaming and digital ubiquity. The widespread adoption of smartphones aligns with the popularity of action-oriented titles optimized for portable interfaces, including Call of Duty: Mobile (16.2%). The minimal use of tablets (1.4%) and the limited preference for less dynamic genres, such as strategy or resource-management games (1.2%), further reinforce the predominance of an accessible, high-intensity gaming model mediated through everyday personal devices.

Table 2 presents the distribution of responses across the 25 items of the Video Game Dependence Test, including the frequency of cases per response category, as well as the corresponding means and standard deviations for each item.

Among the items with the highest mean scores, Item 18 (“When I am bored, I play a video game”) stands out. This finding suggests that video game use functions as a primary coping strategy for managing boredom, potentially reflecting diminished behavioral self-regulation. The centrality of gaming as a default leisure activity may indicate a pattern in which alternative recreational or social engagements are displaced by digital interaction.

Similarly, Item 1 (“I play video games much longer than when I started”) reflects a progressive increase in time investment, consistent with the construct of tolerance commonly associated with behavioral addictions. The tendency to extend gaming sessions beyond initial patterns of use may signal escalating engagement and reduced control overtime allocation.

Item 16 (“I have played for more than three hours straight”) also obtained a relatively high mean score, indicating prolonged and uninterrupted gaming sessions. Extended play duration may be interpreted as a behavioral marker of excessive involvement, potentially associated with difficulty disengaging. This pattern may be reinforced by structural characteristics of contemporary video games—such as continuous reward systems, achievement mechanics, and competitive progression—which promote sustained engagement.

In contrast, the items with the lowest mean scores provide important nuance in interpreting overall dependence levels. Item 2 (“If my video game console or PC is not working, I borrow one from relatives or friends”) obtained one of the lowest ratings. This result may partly be explained by the predominance of smartphones as the primary gaming device (71.5%), thereby reducing reliance on shared or external hardware. Moreover, the low endorsement of this item suggests an absence of compulsive device-seeking behavior.

Likewise, Item 6 (“If I go for a while without playing, I feel empty and do not know what to do”) received a low score, indicating that participants generally do not experience significant emotional

Table 2. Response frequency, mean, and standard deviation for each item

N°	Ítem	Never	Hardly Ever	Sometimes	Usually	Always	Media	SD
1	I spend much more time playing video games than when I started.	220	238	292	89	46	1.44	1.12
2	If my video game console or CP isn't working, I borrow one from a relative or friend.	658	147	57	11	12	0.39	0.77
3	It affects me a lot when I want to play, and the video game console or video game doesn't work.	532	211	94	31	17	0.63	0.94
4	Every time I think about my video games, I feel the need to play them.	396	262	156	46	25	0.92	1.03
5	I dedicate a lot of extra time to my video game topics even when I'm not playing.	464	231	126	39	25	0.79	1.02
6	If I go a while without playing, I feel empty and don't know what to do.	621	166	68	16	14	0.46	0.83
7	It irritates me when a video game doesn't work properly because of the video game console or the CP.	465	200	140	48	32	0.85	1.09
8	It's no longer enough for me to play the same amount of time as before, when I started.	548	202	94	21	20	0.6	0.93
9	I spend less time doing other activities because video games take up a lot of my time.	487	214	109	46	29	0.78	1.06
10	I'm obsessed with leveling up, gaining prestige, and similar things in video games.	482	180	125	48	50	0.87	1.18
11	If a video game isn't working for me, I quickly find another one to play.	518	199	115	29	24	0.69	0.99
12	I think I play too many video games.	418	212	163	54	38	0.96	1.13

13	I find it very difficult to stop once I start playing, even if I have to stop because my parents or friends call me or I have to go somewhere.	542	196	95	32	20	0.64	0.96
14	When I feel bad, I take refuge in my video games.	495	174	121	49	46	0.84	1.16
15	The first thing I do on weekends when I wake up is start playing games.	589	154	88	28	26	0.59	0.99
16	I've played for more than three hours straight.	364	171	209	77	64	1.22	1.26
17	I have argued with my parents, relatives, or friends because I spend a lot of time playing video games or on the CP.	554	185	104	24	18	0.61	0.93
18	When I'm bored, I start playing a video game.	261	195	245	116	68	1.47	1.25
19	I've gone to bed later or slept less because I've been playing video games.	412	213	171	61	28	0.96	1.1
20	As soon as I have a little time, I play a video game, even if it's just for a moment.	383	233	187	49	33	1	1.09
21	When I'm playing, I lose track of time.	389	202	160	76	58	1.11	1.24
22	The first thing I do when I get home from school is play video games.	550	197	101	23	14	0.59	0.9
23	I have lied to my family or others about how much time I have spent gaming.	578	176	88	20	23	0.57	0.94
24	Even when I'm doing other tasks (in class, with my friends, studying, etc.), I think about video games (like advancing, overcoming a level or a test, etc.).	597	168	89	19	12	0.51	0.86
25	When I have a problem, I start playing a video game to distract myself.	446	202	148	45	44	0.91	1.14

discomfort or withdrawal-like symptoms when unable to play. This finding weakens the hypothesis of severe dependence within most of the sample.

Finally, Item 24 ("Even when performing other tasks—such as being in class, with friends, or studying—I think about video games") also showed a low mean score. This suggests that, for most participants, gaming-related cognitions do not substantially intrude upon academic or social functioning, thereby indicating preserved attentional control across contexts.

Levels of Video Game Addiction

Table 3 presents the distribution of participants according to overall levels of video game addiction, calculated from total scale scores. The findings indicate that 21.5% of the sample exhibits risk levels associated with problematic video game use, including 19.4% classified as moderate and 2.1% as high.

Table 3. Levels of video game addiction

Rank	Freq.	%	Level
0- 33	691	78.1	Low
34-67	172	19.4	Moderate
68-100	22	2.5	High

Although most participants fall within the low-dependence category, suggesting generally controlled and recreational use, the proportion of adolescents at moderate and high risk is not negligible. From a public health and educational perspective, this subgroup warrants attention, as sustained moderate involvement may evolve into more severe patterns of behavioral dependence if preventive strategies are not implemented.

Table 4 presents the distribution of video game addiction levels according to participants' gender. The findings indicate that both male and female adolescents exhibit varying degrees of video game addiction. However, the proportion is higher among males (61.5%) than females (38.5%), suggesting a greater relative prevalence of problematic or excessive gaming behaviors within the male subgroup.

Table 4. Level of Video Game Addiction by Gender

	Addiction Levels		
Gender	**% Low**	**% Moderate**	**% High**
Female	35.7	2.7	0.1
Male	42.4	16.7	2.4

This gender-based disparity is consistent with prior empirical literature reporting higher engagement and risk levels among males, potentially associated with differential patterns of socialization, genre preferences, and gaming motivations. Nonetheless, the presence of addiction indicators in both groups underscores that problematic video game use is not exclusively associated with one gender and should be addressed through inclusive preventive strategies.

Table 5 presents the distribution of video game addiction levels according to participants' grade level. The findings indicate that the highest prevalence of high addiction levels is observed among eleventh-grade students, whereas seventh grade registers the lowest proportion within this category. With respect to moderate levels of addiction, greater frequencies are identified in ninth, tenth, and eleventh grades. Conversely, low levels of addiction appear more concentrated in certain upper grades, although this distribution varies across cohorts.

Overall, the pattern suggests a tendency for addiction indicators to increase in the later stages of secondary education. This progression may be associated with developmental and contextual factors, including greater personal autonomy, expanded access to technological devices, reduced

Table 5. Video Game Addiction Levels by Grade

Level	Grado					
	Sixth	**Seventh**	**Eighth**	**Ninth**	**Tenth**	**Eleventh**
Low	53	38	68	164	173	195
Moderate	19	15	20	47	31	40
High	4	1	3	2	5	7

parental supervision, and evolving leisure practices characteristic of mid- to late adolescence. These findings underscore the importance of considering educational stage as a relevant variable in the analysis of problematic video game use.

Table 6 presents the distribution of video game addiction levels according to participants' age. The results indicate that the highest proportion of high addiction levels is concentrated among adolescents aged 15 and 16 years. Regarding moderate addiction, the greatest frequencies are observed among 14- and 15-year-olds. Similarly, low levels of addiction are predominantly identified within the 14-, 15-, and 16-year age groups.

Notably, no cases classified as moderate were reported among participants aged 18 and 20. This pattern may suggest a peak in vulnerability during mid-adolescence, followed by a relative stabilization or reduction in problematic gaming behaviors in late adolescence. Developmental factors—such as evolving academic responsibilities, shifting social priorities, and increased cognitive maturity—may contribute to these age-related differences.

The findings highlight age as a relevant variable in the analysis of video game addiction, particularly emphasizing mid-adolescence as a potentially sensitive period for the emergence of problematic use patterns.

DISCUSSION

The primary objective of this study was to determine the levels of video game addiction among middle and high school students enrolled in three public educational institutions in Duitama, Colombia. The findings indicate that adolescents predominantly access video games on mobile devices and engage with them primarily for entertainment and enjoyment, and to a lesser extent for escapism. These results are consistent with prior research suggesting that parental permissiveness and limited supervision contribute to prolonged exposure and increased gaming time (20). Similarly, Rodríguez-Rodríguez and García-Padilla (21) argue that insufficient regulation of gaming behaviors, particularly when motivated by recreational gratification, heightens the risk of developing problematic use patterns. Moreover, some adolescents may resort to video games as a coping mechanism in response to family conflict or adverse social environments, thereby reinforcing dependence on digital interaction.

Participants reported weekly gaming durations ranging from 1 to 5 hours, with Free Fire the most frequently played title and action games the preferred genre. The prominence of action-based content warrants consideration, as prior studies have noted that games characterized by competitive

Table 6. Level of Addiction by Age

Level	Ege										
	10	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Low	4	37	39	52	147	156	169	68	14	4	1
Moderate	1	10	15	21	37	38	30	19	0	1	0
High	2	2	1	3	1	6	2	1	2	1	1

and violent scenarios may influence adolescents' behavior. While moderate engagement may yield cognitive benefits—such as enhanced visuospatial skills or attentional processing—excessive use has been associated with imbalances across cognitive, physical, emotional, and social domains (22). The structural design of such games, including continuous reward systems and rapid feedback loops, may further intensify sustained engagement.

The item-level analysis of the Video Game Dependence Scale revealed elevated endorsement of playing due to boredom (Item 18) and progressive increases in time spent gaming (Item 1), suggesting deficits in self-regulatory capacity. These findings align with Ropovik et al. (23) and García-Gil et al. (24), who link problematic gaming behaviors to emotional dysregulation and behavioral symptomatology. From a neurodevelopmental perspective, these patterns may be partially explained by the ongoing maturation of the prefrontal cortex during adolescence, a region implicated in impulse control and decision-making. Consequently, video games may serve as accessible mechanisms for mood regulation or for the avoidance of psychosocial stressors (25, 26).

Regarding overall addiction levels, 78.1% of participants were classified within the low-dependence category, suggesting predominantly controlled and recreational use. These findings are consistent with previous studies reporting similar distributions, including Villena-Domínguez (27) and Flores-Carvajal (28), who identified primarily mild or low levels of dependence in their respective samples. Nevertheless, 21.9% of adolescents exhibited moderate to high levels of video game addiction. Although this proportion is a minority, it is clinically and educationally significant, as moderate involvement may progress toward more severe behavioral patterns if unaddressed. Prior research indicates that increased gaming frequency is positively associated with higher addiction risk and the emergence of negative emotional symptoms (8, 29).

Gender-based differences were also observed, with higher levels of addiction among males. This finding is consistent with evidence indicating that male adolescents tend to dedicate more time to gaming and exhibit higher rates of problematic use (7, 24). Dávila and García (20) and Rodríguez-Rodríguez and García-Padilla (21) similarly report greater exposure and vulnerability among males. These disparities may be associated with differential gender socialization patterns, genre preferences, and reinforcement mechanisms embedded within competitive gaming environments.

Collectively, these findings underscore the need for comprehensive preventive strategies involving families, educators, and policymakers. Interventions should not only promote responsible, moderate use of video games but also foster the development of emotional regulation, critical digital literacy, and balanced leisure practices. As highlighted by Villena-Domínguez (27), Aguilar (30), and Estrada-Araoz (3), awareness and education regarding healthy digital habits are essential components of effective prevention frameworks.

One of the main limitations of this study lies in the use of a non-probabilistic sample drawn exclusively from three public educational institutions, which limits the generalizability of the findings. Future research should incorporate more diverse samples, including private institutions and broader educational levels, as well as larger and more demographically heterogeneous populations. Additionally, subsequent studies could explore correlations between video game addiction and related psychosocial variables, such as aggression, gender-based violence, school violence, or academic performance, thereby contributing to a more comprehensive understanding of the phenomenon.

CONCLUSIONS

The findings of this study indicate that video game addiction affects a notable proportion of adolescents (29.1%), underscoring the need for targeted educational interventions that promote responsible gaming habits and support the development of interpersonal and social skills.

Gender and age emerged as significant factors associated with the prevalence of video game addiction. Higher levels were observed among male adolescents and those aged 14-17 years, suggesting that this demographic may be particularly vulnerable to excessive or problematic gaming behaviors. These results highlight the importance of further investigating the underlying causes, motivational drivers, and potential consequences of video game use within this age and gender group.

Future research should examine the long-term impacts of video game engagement across familial, academic, personal, and social domains. Additionally, it is recommended that parents, educators, and adolescents collaborate in early identification and prevention efforts. Including private educational institutions in subsequent studies would also provide insight into how social and contextual factors influence the development of video game addiction, thereby facilitating more comprehensive preventive and intervention strategies.

Authors' contribution

All authors participated in the review's conception, creation of objectives, setting of inclusion criteria, interpretation of the data, critical review of the manuscript, translation of the manuscript, and approval of the final version for publication.

Conflict of Interest

The authors state that they have no conflict of interest

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REFERENCES

1. González-Caino P, Resett SA. Adicción a los videojuegos, calidad de sueño y malestar psicológico en adolescentes y jóvenes adultos. Rev Argent Cienc Comport. 2024;16(3):86-95.
2. Abbasi AZ, Rehman U, Afaq Z, Rafeh MA, Hlavacs H, Mamun MA, et al. Predicting video game addiction through the dimensions of consumer video game engagement: Quantitative and cross-sectional study. JMIR Serious Games. 2021;9(4):e30310.
3. Estrada-Araoz EG. Dependência de videogames em adolescentes peruanos do ensino médio: um estudo transversal. Univ Soc. 2023;15(2):82-89.
4. American Psychiatric Association. Asociación Americana de Psiquiatría publica el Manual Diagnóstico y Estadístico de Trastornos Mentales. 2022. Available from: https://www.psychiatry.org/news-room/news-releases/asociacion-americana-de-psiquiatria-publica-el-man
5. Cvetković-Vega A, Maguiña JL, Soto A, Lama-Valdivia J, Correa-López LE. Cross-sectional studies: Estudios transversales. Rev Fac Med Hum. 2020;21(1).
6. Campo-Pereira I. Videojuegos y socialización diferencial de género: preferencias y práctica. Int Multidiscip J CREA. 2022;2:12.
7. Sánchez-Domínguez JP, Telumbre-Terrero JY, Del Carmen Castillo Arcos L. Descripción del uso y dependencia a videojuegos en adolescentes escolarizados de Ciudad del Carmen, Campeche. Health Addict J. 2021;21(1).
8. Sánchez-Domínguez JP, Telumbre-Terrero JY, del Carmen Castillo Arcos L, Silveira-Sosa EA. Validación del test de dependencia de videojuegos en una muestra de adolescentes mexicanos. Horiz Sanit. 2020;20(1):69-78.
9. López-Fernández FJ, Mezquita L, Griffiths MD, Ortet G, Ibáñez MI. El papel de la personalidad en el juego problemático y en las preferencias de géneros de videojuegos en adolescentes. Adicciones. 2020;33(3):263.
10. Alave-Mamani S, Pampa-Yupanqui S. Relación entre dependencia a videojuegos y habilidades sociales en estudiantes de una institución educativa estatal de Lima Este. Rev Muro Investig. 2018;3(2).
11. Barrera-Mesa CE, Caro-Caro EO, Del Rey-Alamillo R. Víctimas de ciberviolencia: formas, prevalencia y diferencias de género. Rev Investig Desarro Innov. 2022;12(2):239-250.
12. Fernández-Delgado C, Chamizo-Nieto MT, Rey-Peña L. Inteligencia emocional y probabilidad de intervención en ciberacoso: el papel de la interacción emocional alumno-docente. Rev Investig Desarro Innov. 2025;15(1):49-66.
13. Yépez RI, Ormaza MF. Comparative analysis of the

Global Innovation Index using graph visualization and topological data analysis. Rev Investig Desarro Innov. 2025;15(2):295-316.
14. Sánchez-Flores FA. Epistemic fundamentals of qualitative and quantitative research: Consensus and dissensus. Rev Digit Investig Doc Univ. 2019;13(1):101-122.
15. Barrera-Mesa CE, Barrera-Mesa M, Fernández-Morales FH. Consumption of psychoactive substances, mental health and sexual behaviors as risk factors in the health of Colombian children and adolescents. Gac Med Caracas. 2023;131(S3):S253-S265.
16. Jiménez-Sierra AA, Ortega-Iglesias JM, Polo-Altuve YD, Duica-Galofre YA. Diagnóstico del TPACK de estudiantes de formación inicial en informática: estudio de la clase en el Caribe colombiano. Rev Investig Desarro Innov. 2024;14(2):95-116.
17. González-Delgado A, Barrera-Mesa M, Barrera-Mesa E, Niño-Vega JA, Fernández-Morales FH. Nomofobia en adolescentes: Un problema silencioso en las instituciones educativas colombianas. Informes Psicol. 2025;25(1):250-264.
18. Chóliz M, Marco C. Patrón de uso y dependencia de videojuegos en infancia y adolescencia. An Psicol. 2011;27(2):418-426.
19. Paredes-Daza JD, Niño-Vega JA, Fernández-Morales FH. Influence of the quality of remote education on the satisfaction of Colombian university students. Gac Med Caracas. 2025;133(1):134-144.
20. Dávila R, García M. Adicción a los videojuegos en adolescentes: Una revisión sistemática [Tesis]. Lima: Universidad César Vallejo, 2021. Available from: https://hdl.handle.net/20.500.12692/69556
21. Rodríguez-Rodríguez M, García-Padilla FM. El uso de videojuegos en adolescentes. Un problema de salud pública. Enferm Glob. 2021;20(62):557-591.
22. Chitupanta-Chasipanta JA, Quijije-Benavides JI, Vargas-Coello HM, Escobar-Delgado GR. La influencia del videojuego Free Fire en la conducta de los adolescentes. Rev Caribeña Cienc Soc. 2019;8(2).
23. Ropovik I, Martončik M, Babinčák P, Baník G, Vargová L, Adamkovič M. Risk and protective factors for (internet) gaming disorder: A meta-analysis of pre-COVID studies. Addict Behav. 2023;139:107590.
24. García-Gil MA, Fajardo-Bullón F, Rasskin-Gutman I, Sánchez-Casado I. Problematic video game use and mental health among Spanish adolescents. Int J Environ Res Public Health. 2023;20(1):349.
25. Li KP, Niu GF, Jin SY, Shi XH. Social exclusion and video game addiction among college students: The mediating roles of depression and maladaptive cognition. Curr Psychol. 2024;43:31639-31649.
26. Liao Z, Chen X, Huang S, Huang Q, Lin S, Li Y, et al. Exploring the associated characteristics of internet gaming disorder from the perspective of various game genres. Front Psychiatry. 2023;13:1103816.
27. Villena-Domínguez C. Agresividad y dependencia a los videojuegos en estudiantes de secundaria de dos instituciones educativas públicas de Chorrillos [Trabajo de pregrado]. Lima: Universidad Autónoma del Perú, 2019. Available from: https://repositorio.autonoma.edu.pe/bitstream/handle/20.500.13067/1265/Villena%20Dominguez.pdf
28. Flores-Carvajal H. Dependencia de videojuegos y agresividad en adolescentes de la Institución Educativa Jorge Chávez, Tacna, Perú [Tesis de maestría]. Lima: Universidad Peruana Unión; 2020. Disponible en: https://hdl.handle.net/20.500.12840/3617
29. Salas E, Merino C, Chóliz M, Marco C. Análisis psicométrico del test de dependencia de videojuegos (TDV) en población peruana. Univ Psychol. 2017;16(4):1.
30. Aguilar C. Gestión de conflictos escolares: Formando líderes para manejar la empatía como mediación en la resolución de conflictos [Tesis de maestría]. Tunja: Universidad Pedagógica y Tecnológica de Colombia; 2021. Available from: https://repositorio.uptc.edu.co/entities/publication/4aa70f41-30d0-4ac6-b8ce-57378744ddf4