Article

Not peer-reviewed version

Gambling and Gaming: A Comparative Study of Professional Footballers Versus the General Population

Rafael González-Moret , Isabel Almodóvar-Fernández * , María Gimeno , Ana Blanco , Paula Sánchez-Thevenet , Héctor Usó , Gonzalo Haro , Antonio Real-Fernández

Posted Date: 20 June 2024

doi: 10.20944/preprints202406.1430.v1

Keywords: gambling; gaming; football; male gender

 doi:10.20944/preprints202406.1430.v1

Article

Gambling and Gaming: A Comparative Study of Professional Footballers versus the General Population

González-Moret R [1], Almodóvar-Fernández I [2*], Gimeno M [3], Blanco A [4], Sánchez-Thevenet P [5], Usó H [6], Haro G [7] and Real-Fernández A [8]

[1] Facultad de Ciencias de la Salud-Centro de Castellón, Universidad Cardenal Herrera-CEU, CEU Universities, Calle Grecia s/n, 12006, Castellón, España. rafael.gonzalez@uchceu.es
[2] Unidad predepartamental de enfermería. Universitat Jaume I. Grupo de investigación Calidad de vida, deporte y salud. Avinguda de Vicent Sos Baynat, s/n, 12006 Castelló de la Plana, Castelló. Resaarch Manager at Villarreal CF SAD.
[3] Facultad de Ciencias de la Salud-Centro de Castellón, Universidad Cardenal Herrera-CEU, CEU Universities, Calle Grecia s/n, 12006, Castellón, España. mgimenom97@hotmail.com
[4] Facultad de Ciencias de la Salud-Centro de Castellón, Universidad Cardenal Herrera-CEU, CEU Universities, Calle Grecia s/n, 12006, Castellón, España. a.blanco.alvarado@gmail.com
[5] Facultad de Ciencias de la Salud-Centro de Castellón, Universidad Cardenal Herrera-CEU, CEU Universities, Calle Grecia s/n, 12006, Castellón, España. paula.sanchez@uchceu.es
[6] Servicios Médicos. Villarreal CF SAD. investigacion@villarrealcf.es
[7] Head of the Severe Dual pathology Programe, Department of Psychiatry, Hospital Provincial of Castellón, and president of Membership of directive committee of Spanish Dual Diagnose Society, TXP Group. Universidad CEU Cardenal Herrera. gonzalo.haro@uchceu.es
[8] Facultad de Ciencias de la Salud-Centro de Castellón, Universidad Cardenal Herrera-CEU, CEU Universities, Calle Grecia s/n, 12006, Castellón, España. antonio.real@uchceu.es
* Correspondence: almodova@uji.es

Abstract: (1) Background: Elite sport can increase vulnerability to developing mental health pathologies. The purpose of the study is to determine the frequency at which these behavioural disorders appear in elite footballers and evaluate their relationship with other addictions. (2) Methods: A cross-sectional study was conducted between November 2020 and January 2022 on 306 participants. The variables of gambling and gaming were studied. The different groups were compared using Chi-squared tests. Probabilities exceeding 95% (p-values < 0.05) and residuals results greater than 2 or less than −2 were considered significant. (3) Results: There were significant differences between the two groups in terms of alcohol ($p < 0.001$), tobacco ($p < 0.001$), and cannabis ($p < 0.018$) consumption. We also found differences between those who had a history of a nervous disease ($p < 0.015$). 6.6% of the of football players had a probable diagnosis of gambling disorder compared to 1% in the general population ($p < 0.007$). Among the pathological and non-pathological cases of gambling in the football population, significant differences were found between those with a salary of €900–1,500/month ($p < 0.033$) or a history of a nervous pathology ($p < 0.001$). (4) Conclusions: This study showed that professional football players were vulnerable to mental health pathologies related to gaming.

Keywords: gambling; gaming; football; male gender

1. Introduction

The World Health Organization (WHO) includes pathological gambling (gambling disorder) among the pathologies that affect people, based on the International Classification of Diseases (ICD 10-ES) ICD10 code F63.0[1].

The global prevalence of gambling disorder in general population is between 0.1% and 6% depending on the region in question. In Spain, the frequency of its appearance has rapidly increased,

 doi:10.20944/preprints202406.1430.v1

starting from 2.5% in 2011 and reaching 24% in 2015[2,3]. Subsequently, video game addiction (gaming disorder), which is known to impact work and academic productivity as well as family relationships[4,5] , has also been recognised in the ICD-11[5], with a prevalence in Spain of 1% in 2022. The prevalence of this disease in elite athletes is 2%, as indicated by some authors[6].

In elite athletes, the complexity and high demands of their profession often generate an environment of competitiveness and social isolation that can increase their vulnerability to pathologies related to mental health. In fact, the appearance of disorders such as anxiety and sudden changes in mood is a known problem in this professional group[7]. In turn, this psychopathology is a predisposing factor for suffering from disorders such as substance abuse or behavioural addictions, with a worrying prevalence of gambling[8,9] and gaming[10-12] being notable among elite athletes.

It is worth highlighting that in populations with a high socioeconomic level such as elite athletes, the lower economic impact of gaming often delays its diagnosis and therefore, the establishment of early treatment. In addition, professional athletes usually feel they need to respond to demands of greater sporting performance and in so, their risk of substance consumption also synergistically increases[13]. Furthermore, there are other known risk factors in this group such as family disengagement, stress derived from a demanding competition schedule, few external supervision mechanisms, and high levels of economic availability[14]. In an opposite sense and in contrast to everything said, which could serve as an incentive for these athletes, elite athletes often participate directly in the video game industry as actors in products that are of broad commercial interest[15].

Given the relatively recent recognition of gambling and gaming as pathologies that affect mental health, the objective of this current study was to determine the frequency of appearance of these behavioural disorders among professional league football players, as well as to identify their conditioning factors and evaluate their relationship with other diseases in the field of addictions in order to provide evidence contributing to their effective prevention and control in elite athletes[14, 16-18].

2. Materials and Methods

2.1. Design

A cross-sectional study was conducted between November 2020 and January 2022 with 306 participants divided into two subgroups: footballers from the Spanish Professional League and volunteers from the general population.

2.2. Participants

For the professional football player group, non-probabilistic sampling was used for convenience, while a snowball sampling approach was applied in the general population group. An overall recommended sample size of 272 participants was calculated using G*Power software (v3.1.9.6)[19], applying an estimated proportion of possible players at risk of developing gambling/gaming disorder of 8% in the group of professional football players and 1.5% in the general population group, considering a confidence level of 95% (alpha p-values less than 0.05), a power of 0.80, and an allocation ratio of 1:2.

The inclusion criteria for the professional footballers were: age over 18 years, being a member of a related federation as an active professional in a first division team, having an oral and/or written understanding of the Spanish language, and having signed the informed consent to participate in the study. Participants from the general population met the same inclusion criteria, except the need for them to be a member of a federation or an active football professional.

2.3. Gambling and gaming variables and sociodemographic data.

The gambling and gaming variables were studied and sociodemographic variables were recorded in each subgroup. Gambling disorder was determined using the South Oaks Gambling Screen (SOGS) questionnaire, classifying anyone who obtained a score of 4 points or more as a probable pathological gambler. Gaming disorder was determined using the Video Game Addiction

 doi:10.20944/preprints202406.1430.v1

Scale for Adolescents (GASA), considering that neurobiological studies have established a limit of 26 years for this age category)[20] and given that the average age of the participants in both groups was 27.4 years (*SD* = 9.3) The sociodemographic variables were recorded using a tool from the Addictive Disorders Network (Red de Trastornos Adictivos or RTA in its Spanish acronym) from the multicentre CohRTA cohort)[21].

2.4. Instruments

The South Oaks Gambling Screen has a Spanish validation and is used by the Directorate General for the Regulation of Gambling (DGOJ) to assess gambling behaviors. Despite not having been updated in over 30 years, it is one of the most comprehensive tools for evaluating gambling behaviors. With a maximum score of 19, the cutoff point is 4 points to determine pathological gambling behaviors.

Regarding the GASA scale for assessing video game addiction, it consists of 7 items that evaluate the intensity and frequency of gaming, impulsivity, and peer pressure as influencing factors in problematic gaming. The scoring is direct, meaning that a higher score indicates more problematic gaming behavior. Thus, a score is considered indicative of problematic gaming behavior in relation to video games if there are at least 4 responses of 3 or more, providing a minimum of 15 points.

2.5. Procedure

This study took place from September 2020 to July 2022. Prior to commencing data collection, approval for the project was sought from Villarreal CF. Once their consent was secured, authorization from the ethics committee was obtained. With both approvals in hand, player recruitment commenced. The project was introduced to the rosters of each team, and subsequently, coaches provided a list of players constituting each team. Consequently, each player was assigned a unique code. Football players were then requested to sign the informed consent form.

The questionnaires were transferred to a Microsoft Forms template to facilitate online administration. Two separate distributions were made: one to professional football players and another to the general population who participated in the study voluntarily.

2.6. Data Analysis

Data analysis was performed using Microsoft Excel® and R 4.2.0 software using the Rcmdr 2.7-2 package. The different groups were compared using Chi-squared tests. Values for $p < 0.05$ and results in residuals greater than 2 or less than −2 were considered significant.

2.7. Ethical Factors

In compliance with Law 14/2007, dated July 3, on biomedical research, all data arising from this study were handled independently of the identity of the study group, in accordance with the principles outlined in the Declaration of Helsinki concerning research involving human subjects (2013), Regulation (EU) 2016/679 of the European Parliament and of the Council of April 27, 2016, regarding the protection of natural persons with regard to the processing of personal data and on the free movement of such data, as well as Organic Law 3/2018, dated December 5, on the Protection of Personal Data and the guarantee of digital rights. Moreover, all participants provided written informed consent, and this study was approved by the Ethics Committee for Biomedical Research at the CEU Cardenal Herrera University (CEI19/134) and was registered at ClinicalTrials.org with registration code NCT04842461, as a sub-component of the "Mental Health, addictions and biomarkers in high-performance athletes" study.

2.8. Strengths

Our commitment to diversity, equity and inclusion manifests itself in two primary ways. First, we want to serve the team and the rest of the football clubs to preserve the mental health of the players and so that they do not feel discriminated against if they want to make a problem visible.

 doi:10.20944/preprints202406.1430.v1

Secondly, as a research group leader, I am in charge of supporting fourth-year Nursing Degree students to access research, and my students often include members of groups typically underrepresented in the sciences. As such, we do the best to provide these students with an enriching environment during their fourth year and establish research links to foster their development.

Through these experiences, we have become aware of how gender, race, and socioeconomic status influence training opportunities and outcomes, and how this hinders the diversification of future nurses.

3. Results

The main sociodemographic characteristics of the participants in the study are shown in Table 1. The average participant age was 23.5 ± 4 years, with a higher proportion of male participants also with a higher monthly income and a lower level of education in the professional football player group compared to the participants in the general population.

Table 1. Sociodemographic characteristics of the population studied (N = 306).

	PROFESSIONAL FOOTBALL PLAYERS (*n* = 108)		**GENERAL POPULATION (*n* = 198)**		***p*-value Adjusted residues**
	n	**(%)**	***n***	**(%)**	
Sex					**< 0.001**
Men	65	(60.2)	52	(26.3)	5.8/−5.8
Women	43	(39.8)	146	(73.7)	−5.8/5.8
Marital status					n/a
Single	91	(84.3)	151	(76.3)	
Married	15	(13.9)	40	(20.2)	
Divorced/Separated	2	(1.8)	6	(3.5)	
Living arrangements					n/a
Alone	11	(10.2)	12	(6.1)	
Shared accommodation	97	(89.8)	186	(93.9)	
Education level					**< 0.001**
Uneducated	**14**	**(12.9)**	**0**	**(0.0)**	**5.2/−5.2**
Primary education	72	(66.7)	111	(56.1)	1.8/−1.8
Graduate level education	**22**	**(20.4)**	**87**	**(43.9)**	**−4.1/4.1**
Monthly income					**< 0.001**
< €450	**23**	**(21.3)**	**94**	**(47.5)**	**−4.5/4.5**
€450–900	**22**	**(20.3)**	**14**	**(7.1)**	**3.5/−3.5**
€900–1,500	23	(21.3)	48	(24.2)	−0.6/0.6
€1,500–2100	**8**	**(7.4)**	**30**	**(15.2)**	**−2.0/2.0**
€2,100–2,700	2	(1.9)	8	(4.0)	−1.0/1.0
€2,700–3,600	2	(1.9)	2	(1.0)	0.6/−0.06
> €3,600	**28**	**(25.9)**	**2**	**(1.0)**	**7.0/−7.0**

Table 2 shows the substance consumption habits and pathological and mental health history of the population studied. A total of 6.6% of the of professional football players had a probable diagnosis of gambling disorder compared to 1% in the general population. By sex, gambling disorder appeared more frequently in males among the football player group, while the opposite was true in the general population group. Regarding gaming, no significant differences were observed between the professional football players compared to the general population, with 6.5% of former and 4% of the latter presenting gaming disorder. All the cases of gaming disorder among the football players were

 doi:10.20944/preprints202406.1430.v1

male (10.8% of the men in this group) and in the case of the general population, 9.6% and 2% of the men and women, respectively, presented gaming disorder.

Table 2. The substance consumption habits and pathological and mental health history of the population studied (*N* = 306).

		FOOTBALL PLAYERS (*n* = 108)		GENERAL POPULATION (*n* = 198)		*p*-value Adjusted residues
		n	(%)	*n*	(%)	
Consumption in the last 30 days	**Alcohol**					**< 0.001**
	Yes	40	(37.0)	133	(67.2)	−5.1/5.1
	No	68	(63.0)	65	(32.8)	5.1/−5.1
	Tobacco/Nicotine					**< 0.001**
	Yes	0	(0.0)	50	(25.3)	−5.7/5.7
	No	108	(100.0)	148	(74.7)	5.7/−5.7
	Cannabis					**0.018**
	Yes	0	(0.0)	10	(5.1)	−2.4/2.4
	No	108	(100.0)	188	(94.9)	2.4/−2.4
	Opiates					n/a
	Yes	0	(0.0)	2	(1.0)	
	No	108	(100.0)	196	(99.0)	
	Sedatives					n/a
	Yes	1	(0.9)	9	(4.5)	
	No	107	(99.1)	189	(95.5)	
	Other substances					**0.020**
	Yes	7	(6.5)	3	(1.5)	2.3/−2.3
	No	101	(93.5)	195	(98.5)	−2.3/2.3
History of general pathologies						n/a
Yes		27	(25.0)	47	(23.7)	
No		81	(75.0)	151	(76.2)	
Psychiatric history						n/a
Yes		0	(0.0)	2	(1.0)	
No		108	(100.0)	196	(99.0)	
History of a nervous disease						**0.015**
Yes		4	(3.7)	24	(12.1)	−2.4/2.4
No		104	(96.3)	174	(87.9)	2.4/−2.4
Mental health specialist visit						n/a
Yes		36	(33.3)	88	(44.4)	
No		72	(66.7)	110	(55.6)	
SOGS						**0.007**
Gambling disorder		7	(6.6)	2	(1.0)	2.7/−2.7
No gambling disorder		99	(93.4)	190	(99.0)	−2.7/2.7
GASA						n/a
Gaming disorder		7	(6.5)	8	(4.0)	

 doi:10.20944/preprints202406.1430.v1

No gaming disorder	101	(93.5)	190	(96.0)	

In terms of gambling, given that differences were found between the professional football players and the general population, we deepened the analysis by grouping all the cases of gambling disorder and comparing them to all the participants with no gambling disorder to determine possible factors related to this behavioural addiction. The results of this analysis are shown in Table 3 which indicates that there were no sociodemographic differences between these groups except in the participants who received an income between €900 and €1,500 per month, in which gambling disorder was more frequent. Finally, a history of a dual diagnosis or polysubstance use was more common among participants with gambling disorder.

Table 3. Distribution of the sociodemographic characteristics, history of psychopathologies, and mental health care of the study participants according to the presence or absence of gambling disorder.

	NO GAMBLING DISORDER (*n* = 99)		**GAMBLING DISORDER (*n* = 7)**		***p*-value Adjusted residues**
	n	**(%)**	***n***	**(%)**	
Sex					n/a
Men	57	(57.6)	6	(85.7)	
Women	42	(42.4)	1	(14.3)	
Marital status					n/a
Single	82	(82.8)	7	(100.0)	
Married	15	(15.2)	0	(0.0)	
Divorced/Separated	2	(2.0)	0	(0.0)	
Living arrangements					n/a
Alone	10	(10.1)	1	(14.3)	
Shared accommodation	89	(89.9)	6	(85.7)	
Education level					n/a
Uneducated	13	(13.2)	1	(14.3)	
Primary education	64	(64.6)	6	(85.7)	
Graduate level education	22	(22.2)	0	(0.0)	
Monthly income					**0.033**
< €450	23	(23.2)	0	(0.0)	1.4/−1.4
€450–900	21	(21.2)	1	(14.3)	0.4/−0.4
€900–1,500	**17**	**(17.2)**	**5**	**(71.4)**	**−3.4/3.4**
€1,500–2100	7	(7.1)	1	(14.3)	−0.7/0.7
€2,100–2,700	2	(2.0)	0	(0.0)	0.4/−0.4
€2,700–3,600	1	(1.0)	0	(0.0)	0.3/−0.3
> €3,600	28	(28.3)	0	(0.0)	1.6/−1.6
Alcohol					n/a
Yes	37	(34.3)	1	(57.1)	
No	62	(65.7)	6	(42.9)	
Sedatives					n/a

 doi:10.20944/preprints202406.1430.v1

Yes	1	(1.0)	0	(0.0)	
No	98	(99.0)	7	(100.0)	
Other substances					n/a
Yes	6	(6.1)	1	(57.1)	
No	93	(93.9)	6	(42.9)	
History of general pathologies					n/a
Yes	23	(23.2)	2	(28.6)	
No	76	(76.8)	5	(71.4)	
History of a nervous disease					**< 0.001**
Yes	2	(2.0)	2	(28.6)	−3.6/3.6
No	97	(98.0)	5	(71.4)	3.6/−3.6
Mental health specialist visit					n/a
Yes	31	(31.3)	4	(57.1)	
No	68	(68.7)	3	(42.9)	

4. Discussion

This present study showed that the frequency of gambling disorder was significantly higher among elite football players compared to the general population and mainly affected men.

The prevalence of gambling disorder is notably higher among professional football players compared to the general population. This finding is significant as it sheds light on a behavioral health issue that may be exacerbated within the context of professional sports environments. The higher prevalence of gambling disorder among male football players underscores the need for targeted interventions and support systems tailored to the specific needs of athletes, particularly those at risk of developing addictive behaviors. While no significant differences in gaming disorder prevalence were observed between football players and the general population, it's noteworthy that all cases of gaming disorder among football players were male. This gender disparity in gaming disorder prevalence warrants further investigation into the underlying factors contributing to excessive gaming behaviors among male athletes.

These findings with regard to sex confirm the proposals by Viberg)[22] and Håkansson)[23], and also support the data from the study carried out by the Spanish General Directorate of Gambling Regulation)[24], which showed that men were more greatly impacted by this behavioural disorder. In turn, these results also demonstrate that professional football players are vulnerable to mental health pathologies such as gambling addictions, adding to previously reported evidence from different studies that there is a greater risk of gambling disorder among elite athletes)[25,26]. In addition to being male, the level of income and a history of pathologies related to mental health were also factors that our findings suggested were associated with the possibility of having gambling disorder in our study population, thereby coinciding with the report by Dominguez et al.[27]. To deepen our knowledge of this subject, studies analysing the problem of pathological gambling in different types of elite athletes would need to be carried out to elucidate whether the risk is greater in individual or group sports or if it is affected by other variables.

In this current work, the prevalence of the consumption of toxic substances or appearance of risky behaviours seemed to be higher in the professional athlete group, as also previously shown by Huang and colleagues)[28]. Participants with a history of dual diagnosis or polysubstance use were more likely to exhibit gambling disorder. This finding underscores the complex interplay between behavioral addictions and co-occurring mental health conditions, emphasizing the importance of integrated treatment approaches that address both substance use disorders and behavioral addictions concurrently. Prior studies have shown that the consumption of substances such as tobacco, cannabis,

 doi:10.20944/preprints202406.1430.v1

or alcohol are significantly related to pathological gambling[29,30] and have suggested that the impulsive–compulsive personality trait is associated with a greater risk of presenting this pathology)[31]. We were unable to find any previous work that had related these risk factors in professional football players. However, this current study showed that having previously been diagnosed with a nervous pathology was a conditioning factor for these professionals developing gambling disorder, although it is also true that our data also indicated that being a professional football player was a protective factor.

Our findings showed that the prevalence of gaming disorder in both professional athletes and the general population was similar, although it was slightly higher among the professional football players. According to Corey et al.)[31], the number of hours spent on gaming and the social and mental health repercussions this can entail can be harmful to the health of the individual, who my be seeking to satisfy needs for autonomy, competence, and relationships not satisfied in their everyday lives. Of note, football professionals are subjected to high demands that can cause them to be more competitive which could lead them towards more isolated social situations, perhaps resulting in behavioural problems related to mental health.

Changes in mood and anxiety are especially important in relation to suffering from substance use disorders, gambling abuse, or video game addiction. Importantly, the repercussions of these behaviours are not as evident as they are for substance use disorders and so their detection can be delayed by longer. Nonetheless, the psychological and emotional consequences are serious and can affect not only the family relationships and psychological aspects of the individual, but also the course of their professional career as an athlete. Indeed, behavioural dysfunctions, depression, attention deficit, low self-esteem, or social anxiety are all related to gaming disorder)[32], a problem that was detected at a slightly higher frequency among elite football players in our study when compared to the general population.

Finally, money holds a pivotal position in gambling, and gaining insight into the varied perspectives of gamblers regarding it could prove advantageous for both preventing and addressing gambling-related issues[33]. The analysis in our study indicates a relationship between moderate income levels (€900–€1,500 per month) and a higher prevalence of gambling disorder. This connection suggests that financial status may influence susceptibility to gambling addiction, highlighting the need for targeted interventions addressing financial literacy and responsible gambling practices among individuals with moderate incomes.

In conclusion, these results underscore the multifaceted nature of behavioral health challenges within both athletic and general populations. Addressing the sociodemographic disparities and behavioral health patterns identified in this study requires comprehensive interventions tailored to the unique needs of diverse populations, including targeted support for athletes navigating the pressures and challenges inherent in professional sports environments.

5. Limitations

It is important to note that this study had some limitations such as the fact that the sampling was non-probabilistic, which could imply that there was a possible selection bias. Furthermore, there were notable socioeconomic differences between the two study groups, especially in terms of their education levels and salaries. Nevertheless, the need to establish mechanisms to prevent behavioural disorders such as gambling and gaming disorder among elite football players was evident in this work. Protocols for the early detection of these complex mental health pathologies in these athletes must also be developed that consider their history of nervous pathologies as well as various conditioning factors such as a high income level that can increase their vulnerability to these disorders.

Author Contributions: Conceptualization, I.A.F. and G.H.; methodology, I.A.F., H.U., P.S., R.G.M. and G.H.; software and formal analysis, A.R.F., M.G. and A.B.; data curation, I.A.F., R.G.M., A.B., M.G., H.U., P.S. and A.R.F.; writing—original draft preparation, I.A.F., R.G.M. and A.R.F.; writing—review and editing, I.A.F., H.U., P.S. and G.H. All authors have read and agreed to the published version of the manuscript.

 doi:10.20944/preprints202406.1430.v1

Funding: This research received no external funding.

Institutional Review Board Statement: The study was approved by the Ethics Committee for Biomedical Research at the CEU Cardenal Herrera University (CEI19/134) and was registered at ClinicalTrials.org with registration code NCT04842461, as a sub-component of the "Mental Health, addictions and biomarkers in high-performance athletes" study.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Written informed consent has been obtained from the patient(s) to publish this paper.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author, I.A.F., upon reasonable request.

Acknowledgments: To all the participants and the Villarreal Football Club.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Asociación Americana de Psiquiatría. Guía de consulta de los criterios diagnósticos del DSM 5. Arlington, VA; 2013.
2. Granero R, Valero-Solis S, Fernández-Aranda F, Gómez-Peña M, Moragas L, Mena-Moreno T, et al. Response Trajectories of Gambling Severity After Cognitive Behavioral Therapy in Young-Adult Pathological Gamblers. J Behav Addict. 2020 Apr 7;9(1):140–52.
3. CIE-11 para estadísticas de mortalidad y morbilidad [Internet]. [cited 2023 Jun 3]. Available from: https://icd.who.int/browse11/lm/es#/http%3A%2F%2Fid.who.int%2Ficd%2Fentity%2F499894965
4. Brime B, Llorens N, Molina M, Sánchez E SR. Adicciones Comportamentales 2020, Juego y Uso Compulsivo de Internet en las Encuestas de Drogas y Adicciones en España EDADES y ESTUDES [Internet]. Plan Nacional Sobre Drogas. 2020. Available from: http://www.pnsd.mscbs.gob.es
5. Griffiths MD. Adicción a los Videojuegos: Una Revisión de la Literatura. Psicol Conductual. 2005;13:445–62.
6. Håkansson A, Kenttä G, Åkesdotter C. Problem gambling and gaming in elite athletes. Addict Behav Rep. 2018 Aug 14;8:79-84. https://doi.org/10.1016/j.abrep.2018.08.003.
7. Rice SM, Purcell R, De Silva S, Mawren D, McGorry PD, Parker AG. The Mental Health of Elite Athletes: A Narrative Systematic Review. Sport Med. 2016 Sep 1;46(9):1333–53.
8. Nelson TF, Wechsler H, LaBrie RA, LaPlante DA, Stanton M, Shaffer HJ. Sports Betting and Other Gambling in Athletes, Fans, and Other College Students. Res Q Exerc Sport. 2007;78(4):271–83.
9. Loubier SL, Weiss SM. Gambling Behaviors of Former Athletes: The Delayed Competitive Effect Abstract. UNLV Gaming Res Rev J. 2008;12(1):53–60.
10. Bonnaire C, Baptista D. Internet Gaming Disorder in Male and Female Young Adults: The Role of Alexithymia, Depression, Anxiety and Gaming Type. Psychiatry Res. 2019 Feb;272:521–30.
11. Gámez-Guadix M. Depressive Symptoms and Problematic Internet Use Among Adolescents: Analysis of the Longitudinal Relationships from the Cognitive–Behavioral Model. Cyberpsychology Behav Soc Netw. 2014;17(11):714–9.
12. Lee BW, Stapinski LA. Seeking Safety on The Internet: Relationship Between Social Anxiety and Problematic Internet Use. J Anxiety Disord. 2012 Jan;26(1):197–205.
13. Weinstein AM. Computer and Video Game Addiction—A Comparison between Game Users and Non-Game Users. Am J Drug Alcohol Abuse. 2010;36(5):268–76.
14. Anders Håkansson, G Kenttä CÅ. Problem gambling and gaming in elite athletes | Elsevier Enhanced Reader. Addict Behav Reports. 2018;8:79–84.
15. Edelman M. Closing the " Free Speech" Loophole : The Case for Protecting College Athetes ' Publicity Rights in Commercial Video Games. Fla L Rev. 2013;(65):553–86.
16. Derevensky JL, McDuff D, Reardon CL, Hainline B, Hitchcock ME, Richard J. Problem gambling and associated mental health concerns in elite athletes: a narrative review. Br J Sports Med [Internet]. 2019 Jun 1 [cited 2023 Feb 22];53(12):761–6. Available from: https://pubmed.ncbi.nlm.nih.gov/31151953/
17. Rhind DJA, O'Brien K, Jowett S, Greenlees I. Problem gambling among athletes in the United Kingdom. Probl Gambl Cogn Prev Treat [Internet]. 2014 Jan 1 [cited 2023 Feb 22];127–39. Available from: https://www.researchgate.net/publication/304793862_Problem_Gambling_among_Athletes_in_the_United_Kingdom
18. Marengo L, María Herrera Nuñez L, Coutinho TV, Leite GR, Thiago &, Rivero S. Gamer o adicto? Revisión narrativa de los aspectos psicológicos de la adicción a los videojuegos. Neuropsicol Latinoam [Internet]. 2015 Dec 31 [cited 2023 Feb 22];7(3):1–12. Available from: https://www.neuropsicolatina.org/index.php/Neuropsicologia_Latinoamericana/article/view/266

 doi:10.20944/preprints202406.1430.v1

19. Faul, F., Erdfelder, E., Lang, A.-G., & Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;(39):175–91.
20. Domínguez Álavarez AM. Epidemiología y Factores Implicados en el Juego Patológico. Apunt Psicol. 2009;27(1):3–20.
21. Cohorte CohRTA | Grupo de Investigación en Adicciones a Sustancias [Internet]. Available from: https://adiccioneshospitalgermanstrias.com/cohorte-cortha/
22. Vinberg, M., Durbeej, N. and Rosendahl, I. (2023), Young male athletes at risk for problem gambling: Findings from a cross-sectional study in Sweden. Scand J Psychol. https://doi.org/10.1111/sjop.12934
23. Håkansson A, Durand-Bush N, Kenttä G. Problem Gambling and Problem Gaming in Elite Athletes: a Literature Review. Int J Ment Health Addict [Internet]. 2021;21(3):1837–53. Available from: https://doi.org/10.1007/s11469-021-00692-y
24. Dirección General de Ordenación del Juego. Estudio sobre prevalencia, comportamiento y características de los usuarios de juegos de azar en España 2015. Escritos Psycología / Psychol Writings. 2015;7–178.
25. Villoria López C. El juego patológico en los universitarios de la Comunidad de Madrid. Clínica y Salud. 2003;14(1):43–65.
26. Grall-Bronnec M, Caillon J, Humeau E, Perrot B, Remaud M, Guilleux A, Rocher B, Sauvaget A, Bouju G. Gambling among European professional athletes. Prevalence and associated factors. J Addict Dis. 2016 Oct-Dec;35(4):278-290. https://doi: 10.1080/10550887.2016.1177807
27. Domínguez Álvarez AM. Epidemiología y Factores Implicados en el Juego Patológico. Apunt Psicol. 2009;27(1):3–20.
28. Huang Jiun-Hau, Jacobs D F, DerevenskyJ F, Gupta R and Paskus T S. Gambling and Health Risk Behaviors Among U.S. College Student-Athletes: Findings from a National Study. J Adolesc Heal. 2007;40(5):390–7.
29. Pino-Gutiérrez A del, Jiménez-Murcia S, Fernández-Aranda F, Agüera Z, Granero R, Hakansson A, et al. The relevance of personality traits in impulsivity-related disorders: From substance use disorders and gambling disorder to bulimia nervosa. J Behav Addict. 2017;6(3):396–405.
30. Kotyuk Eszter, Anna Magi, Andrea Eisinger, Orsolya Király, Andrea Vereczkei, Csaba Barta, Mark D. Griffiths, Anna Székely, Gyöngyi Kökönyei, Judit Farkas, Bernadette Kun, Rajendra D. Badgaiyan, Róbert Urbán KB and ZD. Co-occurrences of substance use and other potentially addictive behaviors: Epidemiological results from the Psychological and Genetic Factors of the Addictive Behaviors (PGA) Study. ournal Behav Addict. 2020;9(2):272–88.
31. Corey M. Monley BSL and LMO. Gamers' and non-gamers' perspectives on the development of problematic video game play. Curr Psychol. 2023. https://doi.org/10.1007/s12144-023-04278-w
32. Valenciano-Mendoza E, Mora-Maltas B, Mestre-Bach G, Munguía L, Richard J, Derevensky JL, Potenza MN. Clinical Correlates of Sports Betting: A Systematic Review. J Gambl Stud. 2023;39:579–624.
33. Sleczka P, Braun-Michl B, Kraus L. Gamblers' attitudes towards money and their relationship to gambling disorder among young men. J Behav Addict. 2020 Jul 20;9(3):744-755. https://doi.org/10.1556/2006.2020.00042.