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GAMING AS THE NEW MOST IMPORTANT SECONDARY THING IN THE WORLD: RESEARCH ON INTERNET GAMING DISORDER AMONG GAMERS AND ESPORTS PLAYERS

The objective of this research was to (1) gain insight into the online and offline video gaming activities participants engaged in over the previous 12 months related to IGD, and (2) examine differences in internet gaming disorder scores between eSports players and gamers. The research was conducted on 62 participants ($N=62$), 26 of whom are eSports players participating in state-level and regional-level competitions, while the remaining 36 are classified as gamers. Regression analysis and t-test statistical procedures were used to test the hypotheses regarding internet gaming disorder, utilizing the IGD-20 (Internet Gaming Disorder-20) psychological scale. It was hypothesized that age, age of initiation into gaming, weekly hours played, and gamer/eSports player status are statistically significant predictors of internet gaming disorder, while also assuming that eSports players score lower on mood modification, withdrawal symptoms, and conflict subscales of internet gaming disorder. Results indicate that the first hypothesis was partially confirmed, where age ($\beta=-.275$, $p<.05$) and gamer/eSports player status ($\beta=.459$, $p<.001$) are statistically significant predictors of internet gaming disorder, while other variables showed no statistical significance. Testing differences between eSports players and gamers, all three hypotheses were confirmed, with eSports players scoring significantly lower on mood modification ($t(60)=3.37$, $p<.01$), withdrawal symptoms ($t(60)=2.98$, $p<.01$), and conflict ($t(60)=2.86$, $p<.01$) subscales. Conclusively, the results imply better mental health, control, and resilience in comparison to gamers, likely due to the organizational aspects of eSports organizations and the professional elements of their roles, which together seemingly

serve as protective factors against mental health disorders. This research aimed to raise new questions and briefly introduce important details related to eSports and gaming.

Keywords: mental health; internet gaming disorder; gaming; eSports; workplace mental health

1. INTRODUCTION

Today, playing video games ranks among the most popular leisure activities for adults, youths, and children alike. This includes both online and offline gaming on digital devices such as PCs, gaming consoles, and mobile phones, whether played solo or with others. Players can be matched locally, regionally, or even globally. For instance, a player from Bosnia and Herzegovina may typically connect with gamers from various countries across Europe or around the world. This matchmaking mechanism highlights the social dimension of online gaming, as players often form contacts or virtual friendships from different regions.

1.1. Gaming as a dominant way of spending leisure time

According to the latest data, in 2024, the global population of gamers was approximately 2.58 billion, with predictions that this number will grow to 3.02 billion between 2024 and 2029, representing a 15.5% increase (Statista 2024). This data indicates that gaming has become a significant part of everyday life for a large number of people worldwide. Additionally, global research reveals that over 83% of internet users participate in gaming activities. Notably, this percentage is highest among individuals aged 16 to 24 years (91.2% of women and 92.4% of men). This trend gradually declines with age; however, data shows that even among those aged 65 and older, 56.4% of internet users engage in some form of gaming (Statista 2024). In the U.S., over 76% of gamers are over 18, with the highest percentage found in the 18-34 age range (36%). Meanwhile, global data reveals that the average age of gamers is 35 years (Playtoday 2024), suggesting that gaming is not an activity solely dominated by young people, as it is often portrayed in public discourse.

A few years ago, most gamers couldn't have predicted anything surpassing the popularity of PC or console gaming, as these were the main gaming platforms. However, smartphone gaming has grown significantly, with global surveys of participants aged 16 and older indicating that 70% of internet users play video games on their

smartphones. Meanwhile, this share is 35.8% for PC and 23.7% for gaming consoles (Statista 2024). Based on this data, we can conclude that one of the primary reasons for this statistic is the widespread use of smartphones in modern life. Given that most young people worldwide own a smartphone, it's evident that smartphone gaming fulfills all the criteria to dominate the gaming market.

Research on young people reveals that up to 90% of those aged 13 to 14 in the US play video games, while the overall percentage for teenagers is around 85% (Statista 2024). Reports indicate that 20% of gamers worldwide are under 18, translating to approximately 618 million young people. This data is crucial for understanding the phenomenon of gaming. Gaming is a popular way to spend free time – potentially the most dominant – where players regularly interact with others from various regions, highlighting the social significance of gaming research. While various clichés deem football the “most important secondary thing” in the world (primarily among men), the earlier data suggests we could assert that there is another “secondary thing” now widely followed or practiced globally – gaming.

1.2. Justification of studying eSports

eSports is gaming in a professional context, meaning it's a competitive form of organized gaming where players compete individually or in teams, typically ranging from 2 to 12 members, for various prizes, often worldwide, as part of eSports organizations, clubs, or smaller communities.

The eSports industry holds remarkable economic potential. In many countries, eSports is earning the title of "sport"; in other words, it is recognized nationally as equivalent to traditional sports. The eSports market is projected to reach \$3.25 billion in 2025, with growth estimates soaring to \$7.03 billion by 2029 (The Business Research Company 2025). The eSports and gaming market comprises all electronic or physical content like games, vouchers, and accessories, with an audience projected to reach 640 million in 2025 (Fortunly 2025). By that year, the gaming industry is anticipated to generate around \$211 billion in revenue, while the mobile gaming sector is expected to add an additional \$166 billion (Ey 2022). This data indicates that not every gamer is part of the eSports audience; a significant portion of the gaming population engages with video games for recreation and follows the eSports scene only casually. Some countries that recognize the potential of eSports have designated it as a "sport" and refer to eSports players as professional athletes. Notable examples include South Korea, China, the USA, Finland, Germany, Ukraine, Pakistan, Thai-

land, Russia, Italy, Brazil, Nepal, Indonesia, Turkmenistan, Macedonia, South Africa, Uzbekistan, Kazakhstan, Georgia, and others (The Bridge 2021). While the rationale for studying eSports is not solely economic, it is important to note that economic factors fundamentally shape social structures, relationships, and institutions (Marx 1859), leading to a significant influence on people's lives. ESports's increasing popularity and potential are evident in social and legal arrangements. This recognition of eSports as a sport implies granting special visas, such as the P-1 visa provided to athletes in the USA (Kane & Spradley 2017). It also includes integrating gaming and eSports into education, such as using the online video game Minecraft for learning mathematics and chemistry (Fetc 2024), as well as scholarships for eSports and the promotion of the field. Many eSports players are interested in STEM education (Gameplan 2024), which has led to various scholarship programs and incentives aimed at eSports in the STEM direction. It is also important to highlight the introduction of eSports as a discipline at the Olympic Games and the upcoming inauguration of the eSports Olympics in Saudi Arabia in 2025 (IOC 2024). Notably, only games that do not promote violence are included, primarily sports simulation video games (SportsAdda 2024). eSports debuted at the 2022 Asian Olympics, with medals awarded in seven disciplines (video games), while at the Southeast Asian Games, eSports was included for the first time as a medal-winning discipline (Olympics 2023). From a cultural standpoint, gaming and eSports have permeated everyday language, primarily within young people's vernacular (e.g., GG – good game – used as praise, commendation, or to indicate that the matter is concluded). Smartphones have made gaming affordable and accessible to many of the world's population. As indicated in the data above, most users are youth shaping new generations. Given that gaming is one of youth's most prevalent leisure activities, individuals may feel excluded if they do not participate in peer-related activities. This underscores the substantial influence gaming has on young people, as it allows them to connect with peers and foster a sense of community and belonging. Universities and schools could enhance this sense of inclusion and belonging, motivating students and providing a platform for connection and collaboration (Stem Minds 2022). One reason gaming and eSports warrant thorough research is the indication of various mental health-related issues associated with these activities. Apart from addiction often manifested through internet gaming disorder, which will be discussed in the following chapters, gaming and eSports that foster virtual connections may lead to a decline in face-to-face interactions with others, particularly peers and family. Gamers and eSports players who engage with friends in person experience less loneliness, with data suggesting that it

can result in heightened feelings of loneliness after gaming sessions (Yan-Yuo et al. 2023). The phenomena of gaming and eSports have a significant impact on youth from a social perspective. Given the increasing popularity and significance of gaming in young people's lives, it is crucial to explore in greater depth the side effects of gaming on their social interactions. Moreover, social identity and online social capital can be cultivated through various gaming genres, primarily Massively Multiplayer Online Games (Kaye et al. 2017). The social aspect of gaming is essential, as a smaller social circle or feelings of loneliness in the virtual world might also indicate negative consequences for young people's mental health.

The data above clearly indicates that eSports is becoming more popular, with an increase in the number of eSports organizations in the region. Gaming serves as the foundation for eSports, making it essential to explore both. Understanding the numerous benefits as well as the potential dangers of gaming, it is crucial to examine this phenomenon, especially from a mental health perspective.

1.3. Internet gaming disorder

However, excessive gaming can lead to Internet gaming disorder, which is recognized as a potential disorder in the DSM-5 (APA 2013). This classification highlights the need for more research before determining whether this condition should be included in the DSM as a behavioral addiction. The DSM-5 outlines nine criteria for diagnosing gaming disorder: preoccupation with gaming, withdrawal symptoms, tolerance that results in increased gaming time, unsuccessful attempts to limit or stop gaming, loss of interest in other activities, continued gaming despite negative consequences, lying to family members or others in the social circle, using gaming to modify mood, and interference with work or educational opportunities (APA 2013). The ICD-11 criteria for gaming disorder strongly emphasize severe symptoms, including functional impairment caused by prolonged, excessive gaming. In contrast, Internet Gaming Disorder (IGD) is listed in the DSM-5 as a condition that requires further research. Studies show that the ICD-11 criteria focus on significant functional impairments across various life domains, such as health, work, and social interactions, and have a higher threshold for diagnosis (Jo et al. 2019). Moreover, the ICD-11 criteria identify individuals who may not fully meet the IGD criteria yet experience severe impairments, aligning with the DSM-5 (Yen et al. 2022).

The scientific community is divided on the inclusion of gaming disorder; some support it while others raise concerns (Király et al. 2015). There are ongoing disputes

regarding the constructs and diagnostic criteria for this disorder, with various tools attempting to establish suitable theoretical and practical frameworks for identifying and categorizing its key symptoms.

In developing the Internet Gaming Disorder scale (IGD), Griffiths (2005) identified six common elements shared by chemical and behavioral addictions. The nine criteria for diagnosing IGD align with these six dimensions as proposed by Griffiths (Griffiths et al. 2014). This framework led to the creation of the Internet Gaming Disorder Scale (IGD-20), which includes 20 items. Psychometric analyses revealed satisfactory validity and reliability for the IGD-20 results. The scale's validity and criterion validity were particularly highlighted, as evidenced by the correlations between IGD-20 results, weekly gaming hours, and the nine DSM-5 criteria for IGD.

1.4. Mental health and gaming

Research into gaming will become crucial for mental health due to the various implications concerning the mental well-being of gamers, who primarily fall within the 18 to 34 age range. Additionally, a significant percentage of youth under 18 also engage in online or offline gaming. Mental health is not merely the absence of a disorder or disease. According to the WHO, it represents a state of well-being in which individuals recognize their potential, manage daily life stresses, work productively, and contribute to their communities (WHO 2022). The increasing use of terms like “problematic gaming” is already evident in discussions regarding excessive or concerning video game play. In a study by Von der Heiden et al. (2019) involving 2,734 participants, a negative correlation was observed between problematic gaming and affectivity, coping, and self-esteem. Gamers largely pointed to distraction or escapism as their motivation for playing. Escapism, another construct being increasingly explored within gaming contexts, is linked to poor mental health and maladaptive social behaviors in real life, but it can also foster self-confidence, determination, or a sense of belonging within the virtual world (Marques et al. 2023). Problematic or pathological gaming is linked to poorer social skills, increased feelings of loneliness, and lower self-esteem (Lemmens et al. 2011). However, some argue that problematic gaming may stem from declining mental health (Chak & Leung 2004). We can grasp the perspective that impaired mental health precedes problematic gaming and can result in internet gaming disorder. Yet, the question emerges regarding how to explain this in relation to gaming habits formed in childhood, particularly in cases where children began gaming at a very young age. We might argue that this activity is somewhat justified as a form of entertainment for a child that evolves into a habit, but a distinction

exists between gaming and problematic gaming. It is possible that within this relationship, we could identify what we refer to as poor mental health.

In the realm of internet gaming disorders, gaming addiction is linked to various behavioral and emotional issues (Frolich et al. 2016). Additionally, numerous physical health problems are connected to gaming, including a sedentary lifestyle, sleep disturbances, and unhealthy eating habits, all of which contribute to obesity risk factors (Kelly et al. 2021). Moreover, gaming driven by escapism and avoidance correlate with psychiatric distress and problematic gaming (Ballabio et al. 2017; Banyai et al. 2019), alongside competitive motivations (Kiraly et al. 2015) and traits associated with the dark triad of personality (Tang et al. 2020). Sibilla et al. (2022) found that lower personality organization levels are linked to higher problematic gaming scores, highlighting that depressive symptoms, social interactions, and achievement motivation positively mediate this connection. Furthermore, depressive symptoms and deficiencies in self-control have an indirect impact on gaming disorders through the previously mentioned escapism motivations (Cudo et al. 2022). Research also indicates a link between social anxiety and internet gaming disorder, which is mediated by negative metacognitive beliefs regarding online gaming (Marino ex (Marino et al. 2020).

1.5. Mental health and eSports

The issue of mental health among eSports players is not yet widely researched, which presents an additional incentive for initiating new studies. Addiction, or gaming disorder, is commonly mentioned in the context of eSports mental health (Kuss & Griffiths 2012; Schary et al. 2022), although many other factors warrant investigation. Mental health concerns in eSports are gaining increasing attention, with eSports organizations and researchers actively working to improve and maintain the optimal mental health of players (employees) while also preventing negative outcomes related to poor mental health (Pereira et al. 2019; Yin et al. 2020). The positive and negative aspects of gaming and eSports remain subjects of ongoing debate (Kelly et al. 2021). However, some data dispels doubts regarding the nature of the relationship between various psychological variables and eSports. The prevalence of psychological disorders is high among eSports players, with some data indicating that 22% show symptoms of anxiety, while 37% exhibit symptoms of depression (Pereira et al. 2021). The average eSports player faces various stressors, which are certainly part of their job. Research has demonstrated that stressors stemming from eSports participation predict sleep quality, burnout, and social phobia (Smith et al. 2019). The main identified

stressors in the eSports context include performance expectations, in-game pressures, communication difficulties, interpersonal conflicts, and the “toxic” behavior of teammates (Leis & Lautenbach 2020; Poulus et al. 2020), which are frequent occurrences in gaming and eSports. “Toxic” teammates are generally characterized as individuals who frequently criticize their fellow teammates, directing insults while denying their own accountability in communication during competitive situations. Additionally, the aforementioned stressors, along with sleep quality, burnout, and social phobias, positively predict negative mental health outcomes (Smith et al. 2022). Some research also indicates that eSports players experience issues with sleep (45%), alcohol consumption (25%), or poor eating habits (26%) (Pereira et al. 2021). Although competitive eSports may offer some benefits, such as improved cognitive abilities and positive neurological effects (Nuyens et al. 2019), particularly when paired with physical activity (Halbrook et al. 2019), there are still several negative consequences. These include gaming disorder, diminished social skills, lower academic performance, behavioral issues, and a smaller social circle or fewer friendships, all of which can lead to feelings of loneliness (Lobel et al. 2017). A study by Birch et al. (2024) focusing on professional eSports players, specifically those of the popular game Counter-Strike, revealed that nearly three out of four players report having a poor mental state, while one in four exhibit symptoms of depression. Despite the limited research on mental health related to eSports, Kocadag (2019) found a negative correlation between participating in eSports or pursuing a career in this field and psychological well-being. Research has demonstrated that escapism commonly predicts problematic gaming in both the eSports and gaming populations (Banyai et al. 2019). While 11.64% of nonprofessional eSports players and 5.26% of professional eSports players meet the criteria for Internet Gaming Disorder (IGD), with disability being the only significant predictor (Woolhouse et al. 2023), some studies suggest that eSports players exhibit a higher prevalence of IGD compared to non-professional gamers (Maldonado-Murciano et al. 2022), raising a public health concern (Chung et al. 2019). IGD warrants further investigation in the context of eSports and gaming.

Intense gaming is essential for honing skills in a specific video game, making the journey to an eSports career quite stressful. For instance, consider the current top Counter-Strike player known as Donk (Hltv 2025). His experience illustrates both the risks involved and the necessary dedication for success in this field. Donk revealed that by May 2024, he had dedicated at least 14,000 hours – equivalent to over 583 days of active gameplay – to Counter-Strike by the age of 17 (Esports.gg 2024). This indicates that he spent almost two full years of his life immersing himself in a video game.

2. METHOD

The research is empirical and quantitative. It used the method of surveying to study active eSports players and gamers. Regression analysis and T-test analysis were used to analyze the hypotheses.

2.1. Sample

The sample for this research includes participants gathered with the cooperation of the eSport Associations of Bosnia and Herzegovina, Montenegro, and Croatia, as well as the Friendly Fire franchise in Bosnia and Herzegovina, along with additional gamers recruited through gaming groups. In total, 62 participants were assembled, of which 26 are classified as eSports players (primarily recruited via the eSport Association of Bosnia and Herzegovina, with a smaller number from the eSport Associations of Croatia and Montenegro) who compete semi-professionally or professionally at the state or regional level ($N=26$), and 36 gamers (recruited through the Friendly Fire franchise and other sources) ($N=36$). Data for the participants was collected over a two-month period (December 2024 – February 2025), primarily due to the challenges of recruiting eSports players. Although the sample size may seem small, there are not many professional eSports players in Bosnia and Herzegovina, making this sample adequate (approximately 60% of the registered eSports players in the eSport Association of Bosnia and Herzegovina). The median age of all participants was $Med = 22$ years; $SD = 6.84$, with the youngest participant being 18 and the oldest 44 years old. The median age for eSports players was $Med = 24$ years; $SD = 7$, while for gamers, it is $Med = 21.50$; $SD = 6.83$. The sample consists solely of male participants ($N=62$).

2.2. Measures

Following instruments were applied:

- *Questionnaire for collecting data on sociodemographic characteristics*, which was constructed for the purposes of this research and which contains questions about characteristics such as gender, age, the country in which they live, education, relationship status, age when they started gaming, number of hours played per week, platforms participants mostly use for gaming, genres mostly played by participants, and a question determining their eSport or gamer status.

- *The IGD-20 scale (Internet Gaming Disorder)* (Pontes et al. 2014) which contains 20 items that are answered using a five-point Likert-type scale: 1 (“Strongly disagree”), 2 (“Disagree”), 3 (“Neither agree nor disagree”), 4 (“Agree”) and 5 (“Strongly agree”). The 20 items assess online and offline video gaming activity participants engaged during the previous 12 months related to the diagnostic criteria for IGD (APA 2013). Also, the instrument was developed based on the theoretical addiction components model presented by Griffiths (2005) considering the overlap between the nine IGD criteria (APA 2013) and the components model of addiction. The IGD-20 scale assesses six dimensions: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. *Note:* this is a pilot research using the IGD-20 scale, while the validation of this instrument is currently ongoing via a separate project aiming to determine the scale’s psychometric properties. On this small sample, the reliability index (Cronbach Alpha) for the composite score of the IGD-20 scale was $\alpha=.820$.

2.3. Research objectives and problems

The main objective of this research was to (1) gain insight into the online and offline video gaming activity participants engaged in over the previous 12 months related to IGD and (2) examine differences in internet gaming disorder scores between eSports players and gamers. Research problems derived from research objectives can be presented as follows:

- To determine if weekly hours played, age when participants first started playing, number of platforms used for gaming, and gamer/eSports player status can predict internet gaming disorder;
- To examine internet gaming disorder scores and to determine the differences in mood modification subscale between eSports players and gamers;
- To determine the differences in withdrawal symptoms subscale between eSports players and gamers;
- To determine the differences in conflict subscale between eSports players and gamers.

2.4. Research hypotheses

H1. We hypothesize that age, weekly hours played, age of initiation, and gamer/eSports player status are statistically significant predictors of internet gaming disorder, assuming the association is negative in terms of age, age of initiation, and gamer/eSports player status, and positive in terms of weekly hours played.

H2. Since eSports players are professionals and understand their gaming as a job, it is hypothesized that eSports players score, on average, lower on the scale of mood modification compared to gamers.

H3. Based on the above, we assume that eSports players score, on average, lower on the withdrawal symptoms scale than gamers.

H4. We assume that eSports players score, on average, lower on the conflict scale than gamers.

3. RESULTS

The analysis of the first hypothesis revealed that the regression model is statistically significant, explaining 26.3% of the variance in the outcome variable (Table 1). Age ($\beta = -.236$, $p < .05$) and gamer/eSports player status ($\beta = .448$, $p < .001$) were found to be statistically significant predictors of internet gaming disorder, while the age of initiation into gaming and weekly hours played were not statistically significant predictors (Table 2). In this sample, the age at which participants began playing and their weekly hours played showed no association with internet gaming disorder. In contrast, age and gamer/eSports player status were negatively associated with internet gaming disorder; the negative association regarding gamer/eSports player status indicates the impact of gamer status. The regression analysis sample size was deemed sufficient, adhering to the guideline of having a minimum of 10 to 30 subjects per predictor variable, which is acceptable for regression analysis (Memon et al. 2020). Thus, the first hypothesis was partially confirmed.

Table 1. Multiple linear regression model.

Model	R	R ²	Adjusted R ²	SD	F	p
1	.513	.263	.212	10.80	5.097	.001

Table 2. Regression coefficients.

		B	SD	β	t	p(t)
1	Constant	76.701	7.093		10.814	.000
	Age	-.420	.208	-.236	-2.015	.049
	Age of initiation into gaming	-.337	.345	-.114	-.976	.333
	Weekly hours played	.023	.092	.030	.245	.807
	Gamer/eSport player status	-10.958	2.957	-.448	-3.706	.000

Data analysis of the second hypothesis revealed that we have confirmed it. eSports players scored, on average, lower than gamers on the mood modification scale of IGD-20, with statistically significant differences ($t(60)=3.37$, $p<.01$) (Table 3).

Table 3. Differences in Mood modification, Withdrawal symptoms and Conflictbetween gamers and eSports players.

Variable	Group	N	M		t	df	p	(Cohen's d)
IGD – Mood modification	Gamer	36	9.58	Equal variances assumed	3.373	60	.001	0.87
	eSports player	26	7.38	Equal variances not assumed	3.404	55.70	.001	
IGD – Withdrawal symptoms	Gamer	36	6.66	Equal variances assumed	2.986	60	.004	0.77
	eSports player	26	4.88	Equal variances not assumed	2.991	54.38	.004	
IGD – Conflict	Gamer	36	12.86	Equal variances assumed	2.860	60	.006	0.73
	eSports player	26	10.30	Equal variances not assumed	2.800	49.56	.007	

Regarding the third hypothesis, the results showed that the difference between eSports players and gamers on the withdrawal symptoms scale was statistically significant, with eSports players scoring lower, on average, compared to gamers ($t(60)=2.98$, $p<.01$) (Table 3). This analysis confirmed the third hypothesis.

The data obtained from analyzing the fourth hypothesis, which examined the differences between eSports players and gamers on the conflict scale, showed a statis-

tically significant difference ($t(60)=2.86, p<.01$). eSports players scored lower, on average, than gamers in terms of the conflict scale (Table 3), aligning with the fourth hypothesis. Effect sizes were also presented alongside the data in the table, indicating satisfactory effect power of the analyzed differences between gamers and eSports players (Table 3).

4. DISCUSSION

In this study, we examined whether the variables of age, gamer or esports status, initiation age, and weekly hours played can predict internet gaming disorder. Previous studies have confirmed the association between age (Liao et al. 2020; Hawi et al. 2018) and internet gaming disorder. Specifically, younger gamers may invest more time in gaming, as growing up entails assuming more obligations and responsibilities, which can distract from gaming time due to factors like work and family. In this study, we have confirmed that younger respondents are more susceptible to these risks. Research also suggests a connection between weekly hours played and Internet gaming disorder (Ambreen et al. 2023; Lehenbauer-Baum et al. 2015; Lehenbauer-Baum & Fohringer 2015). The age variable correlates with the time spent gaming weekly, suggesting that older respondents cannot allocate as much time to gaming as younger participants. Given that gaming is a precursor to engaging in esports, it is expected that the average gamer, in their intense pursuit of a career in esports, exposes themselves to the risks of developing Internet gaming disorder. In this study, weekly hours played are not a statistically significant predictor of internet gaming disorder, possibly because esports players spend a similar amount of time gaming but perceive this activity differently. Additionally, their managers significantly consider their mental health, suggesting that what is excessive for gamers may not be viewed the same way by esports players due to their professional roles.

Also, the age of gaming initiation is, according to previous research, very important in the context of the development of a gaming disorder. Some authors have presented research findings where they were able to link early initiation with a higher risk of developing gaming disorder (Beard et al. 2017). However, in this sample, the age of gaming initiation does not predict internet gaming disorder. Furthermore, probably the most important factor in this model is the status of a gamer or esports player, where research shows that gamers usually have a higher risk of developing internet gaming disorder (Woolhouse et al. 2023). In the regression model, gamer status is a statistically significant predictor of internet gaming disorder, where certain implica-

tions related to the role of an eSports player can be highlighted. An eSports player is understood to invest a minimum of 40 hours per week in gaming, given that it is part of their job, i.e. the role of a professional gamer – an eSports player. Since gaming is a job (obligation) for eSports players, this type of gaming is organized and directed, in collaboration with others in eSports organizations that take care of the mental health of eSports players and often include physical or sports activities as a vital part of the overall eSports practice. eSports players usually have a team and staff members who can provide emotional and social support, which acts as a positive factor for mental health (DiFrancisco-Donoghue et al. 2019). For this reason, we could assume and expect that internet gaming disorder would not be as pronounced in eSports players as in gamers who do not have a structure and who game alongside work, school, or other obligations. Persistence in these activities despite other obligations can provide certain clues in the context of internet gaming disorder. When we practice an activity professionally, it is difficult to compare it with a situation where this activity dominates in the context of spending leisure time. Considering this, we can talk about potential antecedents of gaming disorder.

For this reason, we compared eSports players and gamers on three subscales of internet gaming disorder, which previous research mostly backed – mood regulation, conflict, and withdrawal symptoms. Namely, from the standpoint of eSports players, given their professional role and comparisons with the professional role of athletes, we can expect that they are gamers who have outgrown the role of gamers as part of (e)sports Darwinism. Just as the gravitation hypothesis (Cox 2005) states that only those highest on the dimensions of emotional stability and extraversion (in case of eSports with a difference on the continuum of extraversion-introversion; as shown in Šunje & Vardo 2022; Matuszewski et al. 2020) persist in the process of playing at the highest level, we can also conclude that something similar happens in the eSports context. It is difficult to talk about playing eSports as a way of modifying mood (Item example: *I play games to help me cope with any bad feelings I might have*), given that this activity is somewhat of a “must” and is related to their professional role. We believe there are very few examples where work becomes a way of mood modification (regulation) and eSports players game for a living. In addition, eSports players may be less susceptible to the mood modification aspect of IGD due to training in performance management within eSports organizations (Lee & Tam 2024). In the case of gamers, when gaming is the leading way to spend their leisure time, in addition to other obligations and activities (e.g., work or school), we can come to the concept of compensation or mood regulation due to the compensatory effect of satisfying psy-

chological needs and regulating mood of video games (Rieger et al. 2014). Research has shown that gaming is often used, in addition to essential obligations, as a form of mood regulation, either in the context of relaxation (positive aspect) or avoidance (negative aspect) (Di Blasi et al. 2019).

Also, when analyzing the conflict subscale (Item example: *I have lied to my family members about the amount of gaming I do*), we expected data in this direction (third hypothesis), given that the conflict subscale represents a conflict between gaming activities and the respondent's interpersonal relationships, obligations, or responsibilities (Griffiths et al. 2014; APA 2013). In the case of eSports players, gaming activity is part of their professional role and should not cause other "more important" obligations or activities to suffer in return. In the case of gamers, we could have expected this to go in the other direction – in the case when gamers excessively engage in this activity, we can assume that other obligations or activities suffer due to problematic gaming. When a gamer states that they spend 40 hours a week gaming, we cannot equate this with 40 hours of gaming as part of a work role. This data implies that the gamer uses his free time for this activity, and by counting the time available to the average person in one day, the question is how much time is left for work, schooling, other obligations, or even sleep.

Within the third analyzed subscale, withdrawal symptoms (Item example: *I tend to get anxious if I can't play games for any reason*), we had to take into account the context of gaming and playing eSports. Since gamers are more susceptible to developing IGD (Woolhouse et al. 2023), and higher scores or prevalence of IGD is associated with more pronounced withdrawal symptoms (Yen, et al. 2022), it is understandable to assume that gamers will achieve higher scores on this subscale. We can say that an eSports player can rarely bring himself to this situation since it is part of his job, while a gamer can be burdened with other work or other obligations and be prevented from using their leisure time for gaming. An eSports player spends at least 8 hours daily on gaming activities (on and off) and can satisfy his gaming needs in this way. In the context of internet gaming disorder itself, this does not mean that eSports players are immune to this disorder (Woolhouse et al. 2023). Still, it is possible that they have a completely different perception of this activity. We are witnesses that many activities can seem much more fun when they are not mandatory and that their appeal can take on a completely different dimension when we are obliged to practice them for several hours a day as part of the obligations specified by the contract or work role.

Conclusively, looking at the results in this sample, having in mind previously mentioned research, eSports players score lower on the internet gaming disorder scale,

precisely subscales of mood modification, withdrawal symptoms, and conflict. The results imply better mental health, control, and resilience than gamers, probably due to the organizational aspects of eSports organizations and professional aspects of their working role, which in synergy seemingly serve as protective factors against mental health disorders.

In this sample, we did not confirm all previous findings, and we believe that only with more detailed and repeated research can we explore this topic in more depth from different aspects. Namely, it is very important to open this issue and point out the advantages and disadvantages of engaging in eSports on the one hand and gaming on the other. This research aimed to open new questions and provide a brief introduction to important details related to eSports and gaming in the hope that the scientific community will pay more attention to these phenomena that are slowly taking over the free time of young people and adults around the world. It is very important to explore what is dominant in people's lives because, as we already know, what we do daily or weekly can have significant short-term or long-term consequences for our mental health.

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IGRANJE VIDEO IGARA KAO NOVA NAJVAŽNIJA SPOREDNA STVAR NA SVIJETU: ISTRAŽIVANJE POREMEĆAJA IGRANJA NA UZORKU GAMERA I ESPORTAŠA

Sažetak

Cilj ovog istraživanja bio je (1) steći uvid u *online* i *offline* igranje video igara u prethodnih 12 mjeseci vezano za IGD i (2) ispitati razlike u rezultatima poremećaja internetskih video igara između igrača eSporta i gejmera. Istraživanje je provedeno na 62 (N=62) učesnika, od kojih su 26 eSport igrači koji učestvuju u takmičenjima na državnom i regionalnom nivou, dok je preostalih 36 učesnika klasifikovano kao gameri. Regresiona analiza i t-test korišteni su za testiranje hipoteza vezano za poremećaje igranja, koristeći IGD-20 psihološku skalu. Pretpostavljalo se da su dob, dob inicijacije u gaming, sedmični sati igranja i status gamera/eSport igrača statistički značajni prediktori poremećaja igranja, dok se također pretpostavlja da igrači eSporta postižu niže rezultate na subskalama regulacije raspoloženja, simptomima apstinencije i konflikta u sklopu poremećaja igranja. Rezultati pokazuju da je prva hipoteza djelimično potvrđena, pri čemu su dob ($\beta = -.275, p < .05$) i status gamera / eSport igrača ($\beta = .459, p < .001$) statistički značajni prediktori poremećaja igranja, dok ostale varijable ne pokazuju statističku značajnost.

Testiranjem razlika između eSport igrača i gamera, potvrđene su sve tri hipoteze, pri čemu su igrači eSporta postigli značajno niže rezultate na subskalama regulacije raspoloženja ($t(60)=3.37$, $p<.01$), simptoma apstinencije ($t(60)=2.98$, $p<.01$) i konflikta ($t(60)<2.016$). Konačno, rezultati impliciraju bolje mentalno zdravlje, kontrolu i rezilijentnost eSportaša u odnosu na gamere, vjerovatno zbog organizacijskih aspekata eSports organizacija, te profesionalnih aspekata njihove radne uloge koji u sinergiji služe kao zaštitni faktori mentalnog zdravlja. Ovo istraživanje je imalo za cilj da otvori nova pitanja i pruži kratak uvod u važne detalje vezane za eSport i gaming.

Cljučne riječi: mentalno zdravlje; poremećaj igranja internetskih video igara; gaming; eSport; mentalno zdravlje na radnom mjestu

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