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Maladaptive emotion regulation strategies as mediators in the relationship between gaming disorder and psychological pain, depression, and anxiety[1]

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Abstract: Video game use disorder, classified in the ICD-11 as a behavioral addiction (code: 6C51), is characterized by impaired control over gaming, prioritization of gaming over other activities, and continuation despite negative consequences. Affecting an estimated 3.3% of the global population and 3.7% in Poland, it has been linked to symptoms of depression, anxiety, and psychological distress. Individuals struggling with this disorder often exhibit difficulties in emotion regulation, which may lead to the adoption of maladaptive coping strategies such as rumination, self-blame, or catastrophizing. These strategies not only reinforce problematic gaming behaviors as a means of escaping negative emotional states but may also intensify symptoms of mental health issues. The aim of this study was to examine the role of maladaptive emotion regulation strategies in the relationship between video game use disorder and psychological pain, anxiety, and depression. *Methods:* The study included 201 Polish computer game players who completed five standardized self-report measures: the IGD-20 (symptoms of Internet Gaming Disorder), HADS (symptoms of anxiety and depression), PAS (psychological pain), and the Cognitive Emotion Regulation Questionnaire (KPRE; emotion regulation strategies). Mediation models were analyzed in R (version 4.5.1) using the *lavaan* package with bootstrap confidence interval estimation (5000 samples, 95% CI). *Results:* Mediation analysis showed that catastrophizing mediated the relationship between Internet Gaming Disorder and all psychopathological variables. Rumination was a significant mediator only for anxiety, while self-blame mediated the relationship with psychological pain. Blaming others did not serve *as a significant mediator. Conclusions:* The findings confirmed the mediating role of maladaptive self-blame, rumination, and catastrophizing strategies in the relationship between computer game use disorder and depression, anxiety, and psychological pain. A stronger mediating effect was observed in the case of psychological pain, suggesting the particular importance of maladaptive emotion regulation in the context of intense emotional suffering. These results highlight the need to address self-blame, rumination, and catastrophizing strategies in the treatment of IGD, as well as in the diagnosis and assessment of co-occurring emotional symptoms and suicide risk among gamers. Further exploration of the identified issue is needed.

Keywords: anxiety, depression, emotion regulation, Internet Gaming Disorder, psychological pain

1. Introduction

The video game industry, which has been developing since the 1960s, has become one of the most dynamic and profitable sectors of the entertainment industry (Patterson, 2020). Globally, the number of players exceeds 3 billion, constituting over 27% of the world's population. According to Turner (2024), 52% of gamers are men, 36% are individuals aged 18-34, and 55% are users from Asia. In Poland, over 20 million people play games regularly, of whom approximately 80% are adults

1 Article in Polish language: https://stowarzyszeniefidesetratio.pl/fer/63P_Demi.pdf

(Marszałkowski et al., 2023). It is estimated that symptoms of problematic gaming occur in 3.3% of the general population (Zhou et al., 2024) and 8.6% of adolescents (Satapathy et al., 2025). Among Polish gamers in early adulthood, this percentage is 3.7%, with significantly higher rates in men (5.8%) than in women (1.8%) (Cudo et al., 2020).

Video games can serve recreational purposes, fulfill identity-related needs, and compensate for social and emotional deficits, helping to reduce stress (Kardefelt-Winther, 2014; Pontes et al., 2014). However, increasing attention is being paid to their potentially problematic nature, especially in the context of maladaptive emotion regulation mechanisms and the accompanying psychological distress (Morales et al., 2022). Excessive, impulsive, and compulsive gaming – particularly aimed at avoiding negative affective states – is considered a clinically significant phenomenon. Consequently, problematic gaming has been included in international classifications of mental disorders as a form of behavioral addiction.

1.1. Gaming Disorder in DSM-5 and ICD-11

Internet Gaming Disorder (IGD) is included in Section 3 of DSM-5 (*Diagnostic and Statistical Manual of Mental Disorders, 5th Edition*) as a condition requiring further study (American Psychiatric Association, 2013). Subsequently, ICD-11[2] (*International Statistical Classification of Diseases and Related Health Problems, 11th Edition*) introduced Gaming Disorder (code: 6C51) under the category of disorders due to addictive behaviors (World Health Organization, 2023).

For the diagnosis of IGD, DSM-5 outlines nine diagnostic criteria, of which at least five must be present in the last 12 months. These include: preoccupation with gaming, withdrawal symptoms, increasing tolerance (needing to spend more time gaming), unsuccessful attempts to limit gaming, loss of other interests, continuing to game despite negative consequences, gaming as a way to regulate emotions, and escalating problems in relationships and responsibilities (American Psychiatric Association, 2013). ICD-11 defines Gaming Disorder as a persistent or recurrent pattern of behavior characterized by impaired control over gaming, increasing priority given to gaming over other activities, and continuation of gaming despite negative consequences. Symptoms must persist for at least 12 months, although this duration may be shortened if symptom severity is extreme (WHO, 2022).

1.2. Psychopathological correlates of gaming disorder

Self-destructive use of video games is associated with deterioration in basic life functions such as sleep, nutrition, and physical activity (Griffiths et al., 2009; World Health Organization, 2023). Numerous studies indicate that IGD co-occurs with symptoms of anxiety, depression, ADHD, and aggression, as well as difficulties in emotion regulation and a high level of psychological pain (Buiza-Aguado et al., 2018; González-Bueso et al., 2020; T'ng et al., 2020; Concerto et al., 2021; Murray et al., 2022; Chang et al., 2023; Feledyn et al., 2024). It is emphasized that gaming disorder is not merely a consequence of excessive time spent gaming, but results from the interaction of neuropsychological factors, interpersonal deficits, maladaptive emotion regulation strategies, and escapist motivations (Yen et al., 2018; Amendola et al., 2019; Brand et al., 2019; Bäcklund et al., 2022). Identified risk factors include impulsivity, compulsivity, difficulty in recognizing and expressing emotions (alexithymia), introversion, neuroticism, low emotional intelligence, low self-esteem, and sensation seeking (Mehroof et al., 2010; Jeong et al., 2011; Gervasi et al., 2017; Buiza-Aguado et al., 2018; Bonnaire et al., 2019).

Maladaptive strategies for coping with emotions – such as avoidance, rumination, and compensatory strategies – play a particularly significant role by fostering escapist gaming and intensifying psychopathological symptoms (Amendola et al., 2019; Yen et al., 2018; Feledyn et al., 2024). The compensatory model of Internet use suggests that individuals with deficits in emotion regulation more often turn to video games to reduce psychological discomfort and restore or

2 World Health Organization. (2023). *International Statistical Classification of Diseases and Related Health Problems* (ICD) (11th revision). Retrieved from https://www.who.int/standards/classifications/classification-of-diseases

achieve emotional balance (Caplan, 2010; Feledyn et al., 2024). In light of research, gaming disorder is strongly correlated with depression, anxiety, and psychological pain, and these relationships can be mutual and complex (Yen et al., 2018; Bonnaire et al., 2019; González-Bueso et al., 2020; Alhamoud et al., 2022; Feledyn et al., 2024). In the following sections of this article, the relationships between gaming disorder and depression, anxiety, and psychological pain will be discussed in detail, with particular attention to the role of maladaptive emotion regulation strategies.

1.3. The role of emotion regulation in the psychopathology of gaming disorder

Emotion regulation, understood as an individual's ability to influence how they experience and express emotions, may play a crucial role in the development and maintenance of gaming addiction (Walenda et al., 2021; Wojtczak et al., 2024). Emotion regulation encompasses processes that affect which emotions one has, when one has them, and how one experiences or expresses them (Gross, 2008). This ability can be adaptive (e.g., cognitive reappraisal, acceptance, distancing) or maladaptive (suppression, rumination, catastrophizing, self-blame) (Kökönyei et al., 2019). Regular gaming is associated with more frequent emotion regulation and less frequent expression of emotions, despite experiencing emotions more intensely, as well as with an impairment of executive functions that hinders flexible emotional management (Villani et al., 2018; Garcia et al., 2024). Dysfunctional emotion regulation – encompassing difficulties in acceptance and limited access to strategies for coping with emotions – correlates with gaming addiction, and gamers often use games as a form of escape (Amendola et al., 2019; Bäcklund, 2022). Individuals with gaming addiction exhibit deficits in interpersonal emotion regulation, engage less in social relationships, and have reduced emotional awareness, and the highest levels of gaming disorder symptoms are typically found in gamers seeking emotional escape (Müller et al., 2021; Bäcklund, 2022).

Gamers with more severe gaming disorder symptoms more frequently employ maladaptive emotion regulation strategies such as suppression, avoidance, rumination, catastrophizing, or self-blame, which is associated with heightened depressive, anxious, and psychotic symptoms (Garnefski et al., 2007; Aldao et al., 2010; Kuss et al., 2018). These strategies play a key role in explaining the psychopathological consequences of problematic gaming, and their use may mediate the relationship between gaming disorder and increased psychological pain (Amendola et al., 2019; Müller et al., 2021; Bäcklund et al., 2022; Garcia et al., 2024). Research indicates that difficulties in emotion regulation contribute to the persistence of negative emotional states, which exacerbates symptoms of depression, anxiety, and psychological distress in individuals with a problematic gaming pattern (Yen et al., 2018; Wong et al., 2020; Liao et al., 2023; Vallejo-Achón et al., 2024). Emotion regulation is thought to function as a mediating variable, since individuals with more intense gaming disorder symptoms more often resort to maladaptive strategies, which are directly associated with higher levels of depressive and anxious symptoms (Yen et al., 2018; Liao et al., 2023; Vallejo-Achón et al., 2024). Moreover, the use of these strategies impedes effective processing and reduction of unpleasant emotions, leading to the persistence and intensification of psychological suffering (Yen et al., 2018; Wong et al., 2020).

1.4. Summary of theoretical analyses and aim of the study

Existing studies indicate significant links between gaming disorder and affective symptomatology and psychological pain, with maladaptive emotion regulation strategies playing a role. Although these relationships have been analyzed separately, there is a lack of a comprehensive model integrating gaming disorder symptoms, psychological pain, depression, anxiety, and emotion regulation into a single framework of relationships. Such integration is particularly needed in research on the psychopathological mechanisms connecting problematic gaming with emotional suffering.

The aim of the present study was to analyze the relationship between gaming disorder severity and symptoms of depression, anxiety, and psychological

pain, and to identify the role of maladaptive emotion regulation strategies as mediators in the relationship between gaming disorder severity and these symptoms. The analysis aimed to empirically test whether dysfunctional emotion regulation explains the co-occurrence of gaming disorder with these psychopathological components.

2. Materials and Methods

2.1. Participants

In an online study, 215 video game players participated, regardless of preferred game genre or time spent gaming. Exclusion criteria included: psychoactive substance addiction, schizophrenia, bipolar disorder, and organic damage to the central nervous system. Data from 201 individuals were included in the analyses (35.82% women, 63.18% men, 1.00% identifying as another gender), ranging in age from 18 to 52 years (M = 27.72; SD = 6.80). The majority of participants had secondary education (47.76%) or higher education (45.76%), and years of education ranged from 9 to 18 (M = 15.09; SD = 2.80). The vast majority of participants were employed (74.63%). The most frequently chosen game genres were RPG (74.75%), survival (58.08%), FPS (59.09%), and RTS (48.48%).

The study received approval from the University Research Ethics Committee (No. 9/2023).

2.2. Measures

Participants completed a sociodemographic questionnaire and the following standardized psychometric instruments:

- *Internet Gaming Disorder-20 (IGD–20)* Test – a tool for assessing symptoms of gaming disorder over the last 12 months, according to DSM-5 criteria (Pontes & Griffiths, 2014; Polish adaptation: Grajewski & Dragan, 2021). The scale consists of 20 items and provides an overall gaming disorder score, as well as six theoretical subscales (not analyzed in this study): preoccupation, mood modification, tolerance, withdrawal symptoms, conflict, and relapse. Cronbach's α for the total score was 0.93.
- *Hospital Anxiety and Depression Scale (HADS)* – 14 items measuring symptoms of depression and anxiety (Zigmond & Snaith, 1983; Polish adaptation: Czerwiński et al., 2020). Cronbach's α reliability: depression = 0.74; anxiety = 0.85.
- *Psychache Scale (PAS)* – 13 items assessing the intensity of psychological pain (Holden et al., 2001; Polish adaptation: Chodkiewicz et al., 2017). Reliability: $\alpha = 0.93$.
- *Cognitive Emotion Regulation Questionnaire (CERQ)* – developed by Garnefski et al. (2002), Polish adaptation by Marszał-Wiśniewska & Fajkowska (2010). It consists of 36 items measuring nine emotion regulation strategies: self-blame, acceptance, rumination, positive refocusing, planning, positive reappraisal, putting into perspective, catastrophizing, and blaming others. Cronbach's α for the respective subscales in the Polish adaptation ranges from 0.68 to 0.83.

3. Results

Statistical analyses were conducted in R (version 4.5.1) using the *lavaan* package (Rosseel, 2012). Distributions of variables were evaluated for normality; skewness and kurtosis values fell within an acceptable range (±2). Means, standard deviations, and Pearson correlation coefficients were calculated. Mediation analyses were performed using regression models with bootstrap confidence interval estimation (5000 resamples). A significance level of $\alpha = 0.05$ was adopted.

3.1. Relationships among the study variables

Table 1 presents the means, standard deviations, and Pearson *r* correlations among the variables. Significant positive correlations were found between gaming disorder severity and anxiety ($r = 0.26$, $p < 0.001$), depression ($r = 0.37$, $p < 0.001$), psychological pain ($r = 0.30$, $p < 0.001$), as well as maladaptive emotion regulation strategies: self-blame ($r = 0.17$, $p < 0.05$),

Table 1. Means, standard deviations, and Pearson correlation coefficients among the variables (N = 201).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
IGD-20: Overall score (ZUG)	41,25	12,83												
HADS: Anxiety	7,55	4,34	0,26***											
HADS: Depression	5,25	3,86	0,37***	0,61***										
PAS: Overall score	31,37	15,31	0,30***	0,76***	0,60***									
KPRE: Self-blame	12,01	3,54	0,17*	0,45***	0,34***	0,54***								
KPRE: Acceptance	12,85	3,62	-0,02	0,09	-0,03	0,08	0,21**							
KPRE: Rumination	13,37	3,7	0,17*	0,55***	0,29***	0,55***	0,52***	0,27***						
KPRE: Positive redirection	11,26	4,03	-0,07	-0,33***	-0,25***	-0,37***	-0,23**	0,05	-0,21**					
KPRE: Planning	13,9	3,79	-0,18**	-0,17*	-0,40***	-0,25***	-0,05	0,34***	0,18*	0,28***				
KPRE: Positive rephrasing	13,34	3,67	-0,17*	-0,35***	-0,42***	-0,43***	-0,19**	0,23**	-0,13	0,57***	0,63***			
KPRE: Broader perspective	12,62	3,43	-0,01	-0,16*	-0,17*	-0,21**	0,03	0,23***	-0,02	0,47***	0,22**	0,52***		
KPRE: Catastrophising	9,27	3,11	0,23***	0,52***	0,38***	0,55***	0,36***	0,05	0,52***	-0,24***	-0,17*	-0,34***	-0,14	
KPRE: Blaming others	8,06	3,32	0,23**	0,12	0,07	0,07	-0,07	0,00	0,26***	0,11	0,11	0,03	0,12	0,34***

Annotation. N – number; M – mean; SD – standard deviation. *** $p < 0{,}001$; ** $p < 0{,}01$; * $p < 0{,}05$.

rumination ($r = 0.17$, $p < 0.05$), catastrophizing ($r = 0.23$, $p < 0.001$), and blaming others ($r = 0.23$, $p < 0.01$). For the adaptive strategies, gaming disorder severity correlated significantly and negatively with positive reappraisal ($r = -0.17$, $p < 0.05$) and planning ($r = -0.18$, $p < 0.01$). Maladaptive emotion regulation strategies showed strong, positive associations with symptoms of anxiety and psychological pain. The highest correlations were observed for rumination ($r = 0.55$ with anxiety, $r = 0.55$ with psychological pain), catastrophizing ($r = 0.52$ with anxiety, $r = 0.55$ with psychological pain), and self-blame ($r = 0.54$ with psychological pain); all significant at $p < 0.001$. In the case of depressive symptoms, the relationships with these strategies were moderate (r ranging from 0.29 to 0.38; $p < 0.001$). In contrast, strategies considered adaptive – such as planning, positive reappraisal, and positive refocusing – correlated significantly and negatively with symptoms of depression, anxiety, and psychological pain. The correlation coefficients ranged from $r = -0.17$ to $r = -0.43$ ($p < 0.05$).

3.2. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and symptoms of depression, anxiety, and psychological pain

Consistent with the aim of the study, a mediation analysis was conducted to identify the role of maladaptive emotion regulation strategies (self-blame, rumination, catastrophizing, blaming others) as mediators in the relationship between gaming disorder severity and symptoms of depression, anxiety, and psychological pain.

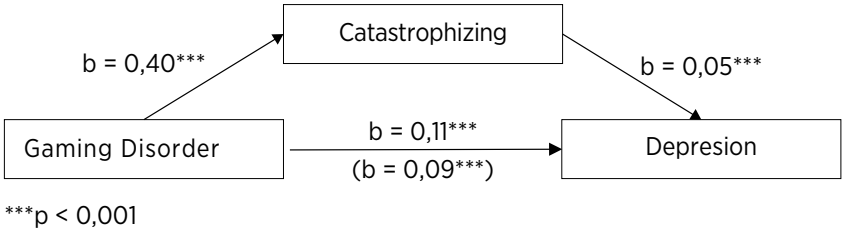

Figure 1. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and depressive symptoms.

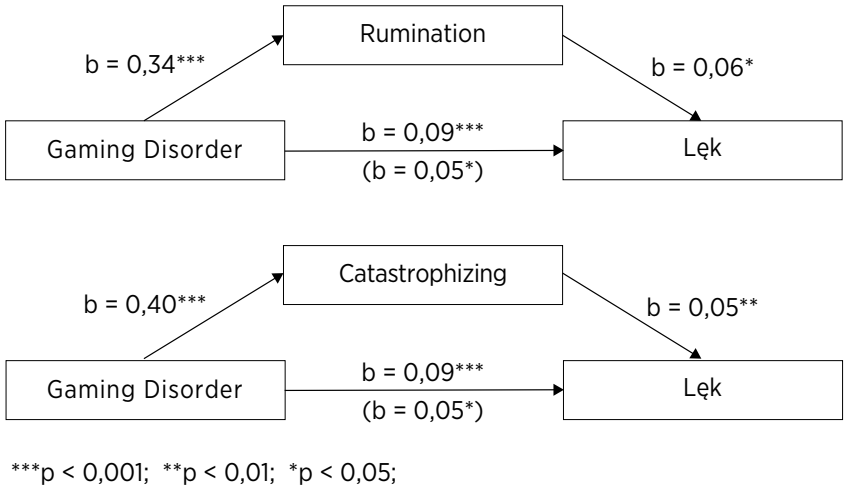

Figure 2. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and anxiety symptoms.

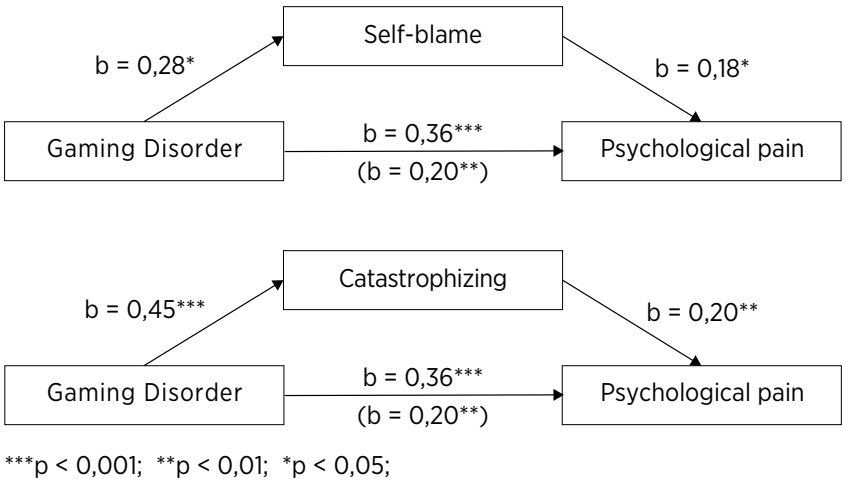

Figure 3. Maladaptive emotion regulation strategies as mediators of the relationship between gaming disorder and psychological pain.

In the model where the dependent variable was depression, a significant total effect of gaming disorder on the level of depressive symptoms was found (b = 0.11; SE = 0.02; 95% CI [0.07, 0.16]; $p < 0.001$), as well as a significant direct effect after including the mediators (b = 0.09; SE = 0.03; 95% CI [0.04, 0.14]; $p = 0.001$), indicating partial mediation. A significant indirect effect was observed only for the catastrophizing strategy (b = 0.02; SE = 0.01; 95% CI [0.01, 0.03]; $p < 0.001$; see Figure 1).

In the model predicting anxiety levels, a significant total effect of gaming disorder on anxiety symptoms was found (b = 0.09; SE = 0.02; 95% CI [0.05, 0.13]; $p < 0.001$), as well as a significant direct effect (b = 0.05; SE = 0.02; 95% CI [0.01, 0.08]; $p = 0.021$), indicating partial mediation. The indirect effects were significant for rumination (b = 0.02; SE = 0.01; 95% CI [0.003, 0.039]; $p = 0.046$) and catastrophizing (b = 0.02; SE = 0.01; 95% CI [0.008, 0.044]; $p = 0.012$). The other strategies were not significant ($p > 0.05$; see Figure 2).

In the model where the dependent variable was psychological pain, gaming disorder showed a significant total effect (b = 0.36; SE = 0.08; 95% CI [0.20, 0.51]; $p < 0.001$) and a significant direct effect (b = 0.20; SE = 0.06; 95% CI [0.07, 0.32]; $p = 0.002$), also indicating partial mediation. Significant indirect effects were noted for catastrophizing (b = 0.09; SE = 0.03; 95% CI [0.04, 0.16]; $p = 0.003$) and self-blame (b = 0.05; SE = 0.02; 95% CI [0.01, 0.10]; $p = 0.024$). Rumination and blaming others did not reach significance ($p > 0.05$; see Figure 3).

4. Discussion

The analysis of the relationship between gaming disorder and symptoms of depression, anxiety, and psychological pain – together with the identification of the mediating role of maladaptive emotion regulation strategies – represents an innovative aspect of the present study due to its comprehensive approach.

The results of the study clearly indicate significant positive associations between gaming disorder severity and symptoms of depression, anxiety, and psychological pain. Both the total effects and direct effects consistently confirm that gaming disorder is a strong predictor of these variables, underscoring the significance of this disorder in the context of mental health.

The study demonstrated a significant influence of gaming disorder on the severity of depressive symptoms, which is consistent with literature emphasizing that individuals struggling with problematic gaming often use this activity as an escape mechanism from negative emotional states (Sepede et al., 2016; Coyne et al., 2020; Pallavicini et al., 2022). The nature of this relationship is often described in the literature as bidirectional: individuals with higher levels of depression are more likely to engage in gaming aimed at emotional escape, which in turn is associated with a worsening of clinical symptoms. However, the more commonly observed pattern is a tendency toward problematic gaming when depressive symptoms are elevated (Burkauskas et al., 2022). It has been observed that for many people with depression, games serve as a mechanism of emotional self-regulation, but excessive gaming leads to a deterioration of mental state.

Similarly, gaming disorder is associated with heightened anxiety symptoms, such as increased tension, irritability, and avoidance of social situations. Our findings confirm that anxiety symptoms can both facilitate the development of gaming disorder and be a consequence of it. Existing literature corroborates this dual relationship between problematic gaming and anxiety (Lavoie et al., 2023; Feledyn et al., 2024). Empirical studies indicate that problematic gaming is related not only to increased tension and greater irritability, but also to social factors, including a tendency to avoid social situations (Bonnaire et al., 2019; Lavoie et al., 2023).

The strongest association was observed between gaming disorder and psychological pain, defined as subjective, intense emotional suffering (Shneidman, 1993). Prior literature provides evidence of a significant relationship between psychological pain and the clinical symptoms of depression and anxiety (Mills et al., 2005; Olié et al., 2010; Yen et al., 2018) but has not confirmed its link with gaming disorder symptoms. The results of the present study therefore underscore, for the first time in the research literature,

that psychological pain is an important component of the psychopathology of gaming disorder and should be considered in the diagnosis and treatment of individuals with problematic gaming.

Regarding the relationship between gaming disorder and emotion regulation strategies, the results clearly showed that more severe problematic gaming is associated with greater use of maladaptive strategies such as rumination, catastrophizing, and self-blame. In contrast, the strategy of blaming others was not significantly associated, in line with earlier studies indicating its limited importance in the context of gaming disorder (Yen et al., 2018; Amendola et al., 2019). This pattern confirms the compensatory model of game use (Caplan, 2010), which posits that individuals with deficits in emotion regulation turn to games as a way to reduce psychological discomfort. The findings highlight the role of maladaptive strategies – especially catastrophizing, rumination, and self-criticism – as key mechanisms sustaining gaming disorder. Furthermore, the literature indicates that maladaptive emotion regulation strategies are linked to escapist gaming and the intensification of psychopathological symptoms (Wang et al., 2017; Amendola et al., 2019).

In light of the presented results, an increase in gaming disorder severity is closely linked with greater use of maladaptive emotion regulation strategies. These findings suggest that such strategies could serve as an important therapeutic target in psychological interventions for individuals with problematic gaming.

The novel application of mediation analyses in this study demonstrated the significant role of maladaptive emotion regulation strategies in mediating the relationships between gaming disorder severity and symptoms of psychological pain, depression, and anxiety. In the relationship with psychological pain, the mediators were catastrophizing and self-blame, whereas for depression the mediation involved only catastrophizing, and for anxiety both rumination and catastrophizing were mediators. The strategy of blaming others did not show a significant mediating effect. The absence of this effect suggests that this strategy, although often classified as maladaptive, may have limited importance in the context of gaming disorder.

The results may imply a dominance of self-critical mechanisms over external attribution among gamers with gaming disorder, which is consistent with previous literature (Orbach et al., 2003; Mills et al., 2005). In contrast, the catastrophizing strategy showed a significant mediating role in the relationships between gaming disorder and all the psychopathological indicators analyzed – psychological pain, depression, and anxiety. These conclusions are reflected in other research findings (Garnefski & Kraaij, 2007; Aldao et al., 2010). Although the direct effect remained significant (indicating partial mediation), the results point to the crucial importance of this strategy in the psychopathological mechanism of gaming disorder. In this context, catastrophizing may amplify feelings of helplessness and anxiety, prompting escape into video games as a short-term way to alleviate emotional suffering, which in the long run may exacerbate the problem (Feledyn et al., 2024).

Rumination served to amplify negative thoughts, mediating only the relationship between gaming disorder and anxiety. In gaming disorder, ruminative thoughts can heighten feelings of threat and helplessness, making it difficult to break away from problematic gaming patterns and increasing anxiety, which is itself a risk factor for the persistence of the addiction. A similar interpretation has been suggested by Nolen-Hoeksema et al. (2008) and Yen et al. (2018). The last strategy examined, self-blame, was associated with feelings of hopelessness and internal suffering, mediating only the relationship between gaming disorder and psychological pain. This interpretation is supported by previous studies (Orbach et al., 2003; Mills et al., 2005). In individuals with gaming disorder, self-critical self-blame may lead to increased emotional suffering, which can reinforce the short-term self-medication mechanism of alleviating symptoms through gaming, albeit with negative long-term consequences.

Emotion regulation is a fundamental factor explaining the co-occurrence of gaming disorder with affective disorders and psychological suffering (Yen et al., 2018; Amendola et al., 2019). The present findings confirm this, indicating that greater gaming disorder severity is associated with increased use of maladaptive strategies that impede adaptive emotional coping. In light of our results, higher levels of gaming disorder are closely

linked to greater use of maladaptive emotion regulation strategies, which underscores their potential role as therapeutic targets in individuals with problematic gaming.

5. Summary, limitations, and directions for future research

This study confirms that gaming disorder is associated with heightened psychological pain and symptoms of depression and anxiety, and that maladaptive emotion regulation strategies – particularly catastrophizing, rumination, and self-blame – serve as key mediators in these relationships. Emotion regulation proves to be a fundamental mechanism sustaining gaming disorder and the accompanying emotional difficulties.

Among the most important limitations of the study is its cross-sectional design, which prevents conclusions about the directionality of relationships, and the use of self-report data, which may affect the reliability of the results. Furthermore, the sample consisted mainly of young adults, which limits the generalizability of the findings to other age and cultural groups.

In view of these limitations, it is necessary to conduct longitudinal and experimental studies to more precisely explain the causal mechanisms among gaming disorder, emotion regulation, and psychological suffering. It would also be worthwhile to expand the range of mediators studied to include other psychological and environmental factors, such as social support or personality traits (Casale et al., 2021).

In clinical practice, these results point to the need to integrate therapeutic approaches focused on emotional regulation and the treatment of co-occurring affective disorders in individuals with gaming disorder, which may contribute to more effective help and prevention. In the diagnostic and therapeutic process for people with gaming disorder, it is advisable to include an assessment of co-occurring depression, anxiety, and psychological pain, as well as the emotion regulation strategies they employ (Ock et al., 2025). Augmenting cognitive-behavioral therapies with metacognitive support to enhance emotional flexibility may effectively reduce IGD, depression, and anxiety symptoms, according to evidence (Casale et al., 2021; Kim et al., 2025).

In conclusion, these findings expand our knowledge of the psychopathological mechanisms associated with gaming disorder, highlighting the multidimensional nature of its relationship with depression, anxiety, and psychological pain, and underscore the need for a comprehensive therapeutic approach.

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