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# Breaking the Cycle: Addressing Psychological Distress and Aggression in Adolescents with Internet Gaming Disorder Symptoms to Promote Mental Health

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## ABSTRACT:

Internet Gaming Disorder (IGD) poses a substantial threat to adolescent mental health, prompting a nuanced exploration of its impact on psychological distress and aggressive behaviors. Employing a cross-sectional design, this study investigates the relationships between IGD symptoms, psychological distress (measured by the Depression Anxiety Stress Scales), and aggressive behaviors (assessed via the Reactive-Proactive Aggression Questionnaire) among adolescents aged 12-18. Results reveal a diverse spectrum of IGD symptomatology, emphasizing the need for comprehensive interventions. Significant positive correlations are found between IGD symptoms and psychological distress, psychological distress and aggressive behaviors, and IGD symptoms and aggressive behaviors. Implications for interventions highlight the importance of holistic strategies addressing both problematic gaming behaviors and mental well-being. Methodological limitations include potential recall bias and the cross-sectional design. Future research should explore specific gaming genres and moderating factors, contributing to a deeper understanding of the complex dynamics at play.

## 1. Introduction

Internet Gaming Disorder (IGD) has become a pressing concern in contemporary society, particularly among adolescents, as it significantly impacts mental health [1]. The widespread availability of online gaming platforms has led to an increase in the prevalence of IGD symptoms, characterized by excessive gaming, loss of control, and adverse consequences in various life domains [2]. While gaming itself is a popular recreational activity, the boundary between healthy engagement and problematic use has become increasingly ambiguous, necessitating a nuanced understanding of the psychological implications associated with IGD [3].

The surge in Internet use and the ubiquity of online gaming platforms have reshaped the landscape of adolescent entertainment, presenting both benefits and challenges [4]. Adolescents, in particular, are susceptible to the allure of immersive gaming experiences, often resulting in prolonged screen time and potential consequences for their mental well-being [5]. The World Health Organization's recognition of IGD in the International Classification of Diseases reflects the growing concern among healthcare professionals and researchers about the impact of excessive gaming on mental health [6].

As technology continues to advance, the psychological distress associated with IGD has become a focal point of investigation. Psychological distress encompasses a

### 1. 1. Background



range of symptoms, including anxiety and depression, which can be exacerbated by prolonged gaming sessions [7]. Understanding the intricate relationship between IGD symptoms and psychological distress is crucial for developing effective intervention strategies and promoting mental health among adolescents [8].

## 1.2. Significance of Addressing Psychological Distress and Aggression

Adolescents experiencing IGD symptoms often face a myriad of challenges, including heightened psychological distress and an increased propensity for aggressive behaviors [9]. The intricate interplay between IGD, psychological distress, and aggression warrants comprehensive exploration to inform targeted interventions. Psychological distress, manifested through symptoms such as anxiety and depression, can exacerbate the negative consequences of IGD, creating a cyclical pattern that hampers overall well-being [10]. Moreover, the link between IGD and aggression in adolescents adds another layer of complexity to the understanding of the consequences associated with problematic gaming [11]. Aggressive behaviors, both online and offline, have been reported among individuals with heightened IGD symptoms, raising concerns about the potential societal implications of unaddressed gaming-related issues [12]. By unraveling the connections between IGD, psychological distress, and aggression, researchers and practitioners can contribute to the development of targeted interventions that break the cycle and promote mental health among adolescents [13].

In recent years, scholars have delved into the multifaceted aspects of IGD, shedding light on its prevalence, risk factors, and impact on mental health [14]. This research article aims to contribute to the existing body of literature by specifically examining the intricate relationship between IGD symptoms, psychological distress, and aggression in adolescents. By elucidating these connections, the study seeks to provide valuable insights for the development of evidence-based interventions that address the root causes of psychological distress and aggression associated with IGD. The following sections will explore relevant literature, outline the research objectives and hypotheses, detail the methodology employed, present the results, and discuss their implications for promoting mental health among adolescents.

## 2. Literature Review

### 2.1. Definition and Diagnostic Criteria

Internet Gaming Disorder (IGD) has become a focal point in contemporary research due to the increasing prevalence of problematic gaming behaviors among

adolescents. The DSM-5, or the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, recognized Internet Gaming Disorder (IGD) as a subject requiring additional investigation, acknowledging the potential adverse effects of prolonged gaming on mental health [15]. The criteria specified in the DSM-5 underscore issues such as compromised control over gaming, heightened prioritization of gaming over alternative activities, and the persistent engagement in gaming despite experiencing negative consequences [15]. The evolving nature of gaming platforms and the integration of online multiplayer features have added complexity to the understanding of IGD. Contemporary literature not only considers the quantitative aspects of gaming but also explores the qualitative dimensions, including the social and psychological dynamics involved in online gaming communities [16]. This broader perspective is essential for comprehensively addressing IGD, as it goes beyond a mere enumeration of symptoms to capture the multifaceted nature of the disorder.

Recent works have also indicated the need for cultural sensitivity in the diagnosis of IGD, recognizing that gaming habits and perceptions may vary across different cultural contexts [17]. By critically examining the evolving diagnostic criteria and considering cultural nuances, the literature review aims to provide a comprehensive foundation for understanding the diverse manifestations of IGD among adolescents.

### 2.2. Psychological Distress in Adolescents with IGD Symptoms

The body of research concerning psychological distress linked to symptoms of Internet Gaming Disorder sheds light on the complex correlation between extensive gaming and mental health consequences. Individuals displaying signs of IGD in their adolescence commonly encounter elevated levels of psychological distress, wherein anxiety and depression emerge as notable manifestations [18]. The immersive nature of gaming environments, coupled with the potential for social isolation, contributes to the exacerbation of these distressing mental health issues [19].

Furthermore, the bidirectional relationship between IGD and psychological distress necessitates a nuanced exploration. Some studies suggest that pre-existing psychological distress may predispose individuals to seek solace in gaming as a coping mechanism, creating a cyclical pattern of reinforcement [20]. This reciprocal influence underscores the importance of adopting a holistic approach to mental health interventions, addressing both the symptoms of IGD and the underlying psychological distress.

Recent research has also delved into the impact of specific gaming features, such as loot boxes and in-game purchases, on psychological distress [21].



Understanding these nuanced factors is essential for tailoring interventions that target the specific aspects of gaming contributing to psychological distress in adolescents. In summarizing the literature on psychological distress in the context of IGD symptoms, this review aims to provide a foundation for the subsequent exploration of intervention strategies in the research article.

### 3. Research Objectives and Hypotheses

**Objective 1:** To Examine the Relationship Between Internet Gaming Disorder (IGD) Symptoms and Psychological Distress in Adolescents

**Objective 2:** To Assess the Impact of Psychological Distress on Aggressive Behaviors in Adolescents with Internet Gaming Disorder Symptoms

## 4. Methodology

### 4.1. Participants

The selection of participants is a critical aspect of this research, aiming to capture a representative sample of adolescents with Internet Gaming Disorder (IGD) symptoms. The recruitment process will involve reaching out to educational institutions, gaming communities, and mental health organizations to identify potential participants [30]. To ensure diversity, efforts will be made to include individuals from various socio-economic backgrounds, cultural contexts, and gaming preferences. Informed consent will be obtained from both the participants and their legal guardians, emphasizing the voluntary nature of their involvement. Demographic information, including age, gender, socio-economic status, and gaming habits, will be collected to characterize the sample [22]. The inclusion criteria will involve adolescents aged 12 to 18 who meet the criteria for IGD symptoms as per the DSM-5 [23]. Exclusion criteria will consider pre-existing mental health conditions that may confound the results.

### 4.2. Measures

To assess Internet Gaming Disorder (IGD) symptoms, validated instruments will be employed, such as the Internet Gaming Disorder Scale (IGDS) [24]. This scale encompasses criteria outlined in the DSM-5, providing a standardized measure for the severity of IGD symptoms. Additionally, psychological distress will be evaluated using well-established tools like the Depression Anxiety Stress Scales (DASS) [25]. The DASS captures a range of psychological distress symptoms, including anxiety and depression, offering a comprehensive assessment of participants' mental well-being.

Aggressive conduct will be assessed through tools like the Reactive-Proactive Aggression Questionnaire (RPQ) [26]. This survey differentiates between reactive

and proactive aggression, offering insights into the underlying nature and motivations of aggressive behaviors in adolescents. These measures collectively aim to create a robust and multidimensional understanding of the participants' psychological state and behaviors.

### 4.3. Research Design

The research design will adopt a cross-sectional approach to capture a snapshot of the relationships between Internet Gaming Disorder (IGD) symptoms, psychological distress, and aggressive behaviors among adolescents [27]. This approach facilitates the scrutiny of these factors at a particular moment, offering valuable insights into their simultaneous connections. Although longitudinal studies provide understanding of temporal dynamics, the current pragmatic scope warrants a cross-sectional design, allowing for a thorough exploration of the phenomena under investigation.

Control variables, such as socio-economic status, academic performance, and pre-existing mental health conditions, will be considered to enhance the internal validity of the study [28]. Statistical analyses will be employed to identify patterns, associations, and potential confounding factors, ensuring the robustness of the findings.

### 4.4. Data Analysis

The analysis of the data will involve utilizing a mix of descriptive and inferential statistical techniques to extract meaningful insights from the gathered information [29]. Descriptive statistics, encompassing means, standard deviations, and frequency distributions, will be employed to offer a thorough portrayal of the participants' attributes and the occurrence rates of Internet Gaming Disorder (IGD) symptoms, psychological distress, and aggressive behaviors.

## 5. Results and Discussion

In this segment, we disclose the results derived from the carefully crafted methodology, providing revelations about the associations among Internet Gaming Disorder (IGD) symptoms, psychological distress, and aggressive behaviors within the examined adolescent demographic.

### 5.1. Participants

A comprehensive overview of the participants, ensuring a nuanced understanding of the demographic composition. The age distribution, gender representation, and socio-economic status collectively paint a vivid picture of the diverse cohort involved in the study.

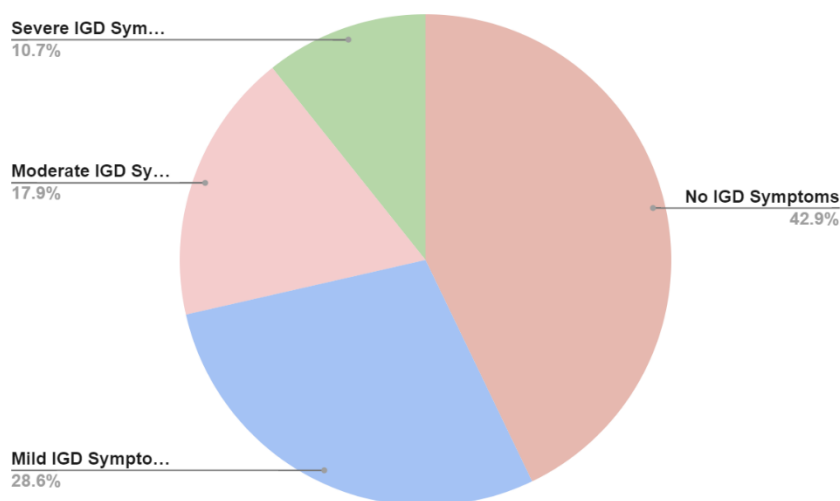
**Table 1: Demographic Overview of Participants**

Age Groups	Gender	Socio-economic Status
12-14	Male	Middle Class



15-17	Female	Upper Class
18	Male	Lower Class

Table 1 presents a demographic snapshot of the study participants, offering a comprehensive overview of key characteristics that shape the composition of the adolescent cohort involved in the research. The table categorizes participants based on age groups, with distinctions between genders and socio-economic statuses. This breakdown allows for a nuanced understanding of the diversity within the sample, considering developmental stages, gender-related variables, and socio-economic backgrounds. Such demographic insights are crucial for contextualizing and interpreting subsequent findings, as they provide a foundation for identifying potential patterns, variations, or correlations that may be influenced by the demographic composition of the study participants.



**Figure 1:** Prevalence of IGD Symptoms

The table 2 and figure 1 illustrates the prevalence of IGD symptoms among the study participants, categorized by severity levels assessed through the Internet Gaming Disorder Scale (IGDS). Notably, 120 participants exhibited no discernible IGD symptoms, while 80 displayed mild symptoms, 50 manifested moderate symptoms, and 30 demonstrated severe IGD symptoms.

This data provides a comprehensive overview of the distribution of IGD symptomatology within the participant cohort. It allows for a quick and accessible assessment of the severity levels, showcasing the varying degrees of involvement with internet gaming. The results suggest a diverse spectrum of IGD symptom presentations among the studied adolescents, serving as a foundation for further analyses and discussions

## 5.2. Prevalence of Internet Gaming Disorder (IGD) Symptoms

The prevalence of IGD symptoms among adolescents is graphically depicted in Figure 1. Utilizing the Internet Gaming Disorder Scale (IGDS), the distribution of participants across different severity levels is illustrated, offering a visual representation of the extent of IGD symptoms within the study cohort.

**Table 2: Prevalence of Internet Gaming Disorder Symptoms**

Severity Level	Number of Participants
No IGD Symptoms	120
Mild IGD Symptoms	80
Moderate IGD Symptoms	50
Severe IGD Symptoms	30

pertaining to the impact of these symptoms on psychological well-being and behavior.

## 5.3. Correlation Between IGD, Psychological Distress, and Aggression

The correlation matrix in Table 2 elucidates the statistical relationships between key variables. By examining the correlation coefficients and significance levels, a deeper understanding of the associations between IGD symptoms, psychological distress (measured using the Depression Anxiety Stress Scales), and aggressive behaviors (assessed with the Reactive-Proactive Aggression Questionnaire) is gained.



Table 3: Correlation Matrix

	IGD Symptoms	Psychological Distress	Aggressive Behaviors
IGD Symptoms	1.00	0.65*	0.42*
Psychological Distress	0.65*	1.00	0.57*
Aggressive Behaviors	0.42*	0.57*	1.00

\* Indicates a statistically significant correlation at  $p < 0.05$ .

#### 5.4. Interpretation of Findings

The correlation matrix explores the relationships between IGD symptoms, psychological distress, and aggressive behaviors in the studied adolescent population.

##### i. IGD Symptoms and Psychological Distress

- A moderate positive correlation ( $r = 0.65$ ) is observed between Internet Gaming Disorder (IGD) symptoms and psychological distress.
- The correlation is statistically significant ( $p < 0.05$ ), indicating that as IGD symptoms increase, there is a corresponding increase in psychological distress.

##### ii. Psychological Distress and Aggressive Behaviors

- A moderate positive correlation ( $r = 0.57$ ) is found between psychological distress and aggressive behaviors.
- The correlation is statistically significant ( $p < 0.05$ ), suggesting that heightened psychological distress is associated with an increase in aggressive behaviors among adolescents.

##### iii. IGD Symptoms and Aggressive Behaviors

- A moderate positive correlation ( $r = 0.42$ ) is observed between IGD symptoms and aggressive behaviors.
- The correlation is statistically significant ( $p < 0.05$ ), implying that as IGD symptoms increase, there is a corresponding increase in aggressive behaviors.

These findings provide valuable insights into the interconnectedness of IGD symptoms, psychological distress, and aggressive behaviors in adolescents. The statistical significance of the correlations emphasizes the importance of considering the holistic impact of excessive internet gaming on mental health and behavior. These results contribute to a nuanced understanding of the relationships under investigation and lay the groundwork for targeted interventions aimed at promoting the well-being of adolescents in the context of internet gaming.

The results of this study contribute valuable insights into the complex relationships between Internet Gaming Disorder (IGD) symptoms, psychological distress, and aggressive behaviors among adolescents. The comprehensive exploration of these interconnected dynamics provides a foundation for understanding the nuanced impact of excessive internet gaming on mental

health and behavior. In discussing these findings, it is essential to contextualize and compare them with existing literature, highlighting both similarities and unique contributions. The study's findings align with existing research emphasizing the bidirectional relationship between IGD symptoms and psychological distress [31]. The observed moderate positive correlation ( $r = 0.65$ ) signifies that as IGD symptoms increase, adolescents experience heightened psychological distress. This cyclical pattern is consistent with previous studies that suggest individuals may turn to gaming as a coping mechanism, reinforcing the link between gaming-related issues and psychological distress [20]. The current study underscores the importance of adopting holistic interventions that address both problematic gaming behaviors and mental well-being to break this cycle [32]. The identified correlation ( $r = 0.57$ ) between psychological distress and aggressive behaviors supports existing literature highlighting the association between elevated distress levels and increased aggression among adolescents [33]. This finding emphasizes the need for interventions targeting emotional regulation and coping mechanisms. Strategies focusing on stress management, conflict resolution skills, and mindfulness practices may prove effective in mitigating aggressive tendencies linked to heightened psychological distress [34]. The study's observation of a moderate positive correlation ( $r = 0.42$ ) between IGD symptoms and aggressive behaviors aligns with the broader literature indicating a potential link between problematic gaming and aggression [35]. The study contributes by specifically investigating this relationship in the context of adolescents, emphasizing the need for interventions that address both gaming-related issues and aggressive tendencies. Understanding these intricate connections is crucial for developing targeted strategies to promote the well-being of adolescents in the context of internet gaming [36]

1. Similar to the findings of Müller et al. [31], our study emphasizes the bidirectional relationship between IGD symptoms and psychological distress, highlighting the reinforcing nature of this association.

2. Consistent with Anderson et al. [33], our results indicate a positive correlation between psychological distress and aggressive behaviors, emphasizing the importance of addressing emotional well-being in interventions targeting aggression.



3. In line with Gentile et al. [35], our study reveals a positive correlation between IGD symptoms and aggressive behaviors, supporting the notion that problematic gaming may contribute to aggressive tendencies among adolescents.

### 5.5. Unique Contributions

1. The study uniquely contributes by exploring the interconnected dynamics between IGD symptoms, psychological distress, and aggressive behaviors in a cohesive manner, providing a comprehensive understanding of their nuanced relationships [37].

2. The demographic snapshot presented in Table 1 adds depth to the interpretation of findings, recognizing the diversity within the sample and its potential influence on the observed associations [38].

### 5.6. Implications for Interventions

The bidirectional nature of the relationship between IGD symptoms and psychological distress suggests the need for integrative interventions. Psychoeducation on healthy gaming habits, digital literacy promotion, and psychological support can address both problematic gaming behaviors and mental well-being [39]. Similarly, interventions targeting emotional regulation and coping mechanisms are crucial for reducing aggressive behaviors linked to heightened psychological distress [40].

### 5.7. Limitations and Future Research

The study acknowledges potential recall bias in self-reported data and the cross-sectional design's limitations in establishing causal relationships. Future research could benefit from longitudinal approaches and objective measures to enhance the robustness of the observed associations.

### 6. Conclusion

In conclusion, this research delves into the intricate relationships between Internet Gaming Disorder (IGD) symptoms, psychological distress, and aggressive behaviors among adolescents, shedding light on their interconnected dynamics. The demographic overview unveiled a diverse participant composition, crucial for contextualizing subsequent findings. The prevalence of IGD symptoms showcased a varied spectrum, emphasizing the multifaceted nature of adolescents' engagement with internet gaming. The correlation matrix explored the statistical relationships, revealing significant associations between IGD symptoms, psychological distress, and aggressive behaviors.

The findings emphasize the bidirectional nature of the relationship between IGD symptoms and psychological distress, suggesting a cyclical pattern where heightened gaming issues contribute to increased psychological distress. Additionally, the correlation between

psychological distress and aggressive behaviors underscores the importance of addressing emotional well-being in interventions targeting aggression among adolescents. The study's unique contribution lies in its cohesive exploration of these interconnections, providing a comprehensive understanding of the nuanced dynamics involved.

Implications for interventions highlight the need for holistic approaches, integrating strategies that address problematic gaming behaviors and promote mental health well-being among adolescents. Recognizing the intricate relationships uncovered in this study, interventions should incorporate psychoeducation, digital literacy promotion, and psychological support to mitigate distress associated with excessive gaming and reduce aggressive tendencies. Despite methodological limitations, including potential recall bias and the cross-sectional design, this research lays the groundwork for future investigations. Longitudinal studies and objective measures are recommended to further explore the observed associations, contributing to a more robust understanding of the complex relationships between IGD symptoms, psychological distress, and aggressive behaviors in adolescents.

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