Impact of Game Genre on Aggression and Social Intelligence

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Abstract

The relationship between video games and their potential effects on human behaviour has been a subject of extensive research and debate over the past few decades, encompassing a myriad of psychological, sociological, and cultural dimensions. Among the numerous facets of this ongoing discourse, one area of particular interest is the influence of game genres on aggression and social intelligence. This research topic delves into the complex interplay between the types of video games individuals engage with and the subsequent impact on their aggression and social intelligence development, aiming to unravel the intricate dynamics that shape human behaviour in virtual environments. The sample used is of 150 individuals between the ages 18 to 30 years who have indulged into gaming for atleast 2 years. Regression analysis is conducted in order to measure the impact of game genres on aggression and social intelligence. The findings indicate that while game genre does not significantly impact aggression, it does influence social intelligence to a degree.

Keywords: Aggression, Social intelligence, Game genres.

1. Introduction

Video games have transcended their origins as mere entertainment to become an integral part of contemporary culture and lifestyle. The gaming industry has witnessed exponential growth, offering a diverse array of genres, each presenting unique experiences and challenges to players. From fast-paced first-person shooters to immersive role-playing games, social simulations, and puzzle-solving adventures, the spectrum of gaming experiences has expanded exponentially. With such a vast array of options, it becomes imperative to understand how these distinct game genres affect individuals' psychological and social well-being, touching upon aspects of cognition, emotion, and social interaction. Previous research has often focused on the link between violent video games and aggression, drawing attention to potential connections that have sparked intense debates. While some studies have suggested a correlation between exposure to violent games and aggressive behaviour, the broader landscape remains intricate and multifaceted. Additionally, less explored is the impact of non-violent game genres on aspects of social behaviour and cognitive development, such as social intelligence. Social intelligence encompasses a spectrum of skills related to understanding, interpreting, and effectively interacting with others, which are crucial in navigating the complexities of our interconnected world. The exploration of the impact of game genre on aggression and social intelligence holds significant implications for both researchers and society at large. Several key reasons underscore the importance of this research:

Nuanced Understanding: By examining different game genres, researchers can gain a more nuanced understanding of how video games affect individuals. This approach acknowledges that not all games are equal in their potential effects and allows for a more comprehensive assessment of their impact on behaviour and cognition.

Mental Health and Well-Being: Understanding the relationship between game genres and aggression is critical for addressing concerns about the potential contribution of video games to aggressive behaviour, which can have significant repercussions on individuals' mental health and overall well-being.

Social Intelligence Development: Investigating the impact of games on social intelligence is vital as it has implications for individuals' abilities to navigate social relationships, solve interpersonal problems, and adapt to various social contexts. It also has relevance for educational settings and the development of skills required for effective collaboration and teamwork.

Informed Decision-Making: This research can provide valuable information to parents, educators, policymakers, and game developers. It can help inform decisions about the types of games children and adolescents are exposed to and guide the design of educational and entertainment games that promote positive cognitive and social development.

The significance of this research lies in its potential to:

- Provide evidence-based insights into the impact of video game genres on aggression, contributing to the ongoing debate on this topic.
- Shed light on how video game preferences may be linked to the development of social maturity, offering guidance for parents, educators, and game developers.
- Offer practical implications for designing games that foster positive social development and emotional well-being.
- Promote a more balanced and informed perspective on video games by addressing concerns with empirical data.

This research is crucial in addressing contemporary concerns surrounding video games, enriching our understanding of how different game genres influence behaviour, and facilitating the creation of games that not only entertain but also contribute positively to players' lives. Hence, the research topic of exploring the impact of game genre on aggression and social intelligence is a vital endeavour in our digitally connected world. It addresses the complexities of video game effects, offering insights that can inform discussions, policies, and interventions aimed at promoting both responsible gaming and the development of essential social intelligence skills.

The study, "Impact of Game Genre on Aggression and Social Intelligence," addresses a critical need in the field of psychology and gaming research due to several compelling reasons:

Rising Popularity of Video Games: Video games have become an integral part of contemporary entertainment and culture, with millions of individuals, including children and adolescents, engaging in gaming regularly. The widespread popularity of video games necessitates an in-depth understanding of their potential effects on players across various demographics.

Conflicting Findings: Existing research on the relationship between video games and aggression has yielded mixed results, often fuelling debates about the impact of gaming on individuals' aggressive tendencies. This study seeks to contribute clarity and nuance to this ongoing debate by examining the influence of game genres, aiming to reconcile conflicting findings and establish robust conclusions.

Social Intelligence's Importance: In an increasingly interconnected world, social intelligence plays a pivotal role in personal and professional success. Investigating how video game genres can enhance or hinder social intelligence is crucial for informed decision-making by parents, educators, and policymakers, especially in shaping interventions and educational strategies.

Diverse Game Genres: The vast diversity of video game genres presents a unique opportunity to explore how different gameplay experiences may shape players' behaviour and cognition. Understanding which genres are associated with positive or negative outcomes in terms of aggression and social intelligence can inform game design, selection, and regulatory frameworks, fostering the development of games that promote positive social interactions and emotional well-being.

2. Review of Literature

Anderson and Dill (2000) conducted a seminal study on the impact of video game genre on aggression in both lab and real-life settings. Their experiments, using various genres, showed that exposure to violent video games increased aggressive thoughts and behaviours. Research indicates that violent video games can prime aggression in the short term, potentially affecting conflict resolution, but long-term exposure may lead to the internalization of aggressive scripts, influencing personality traits. Concerns about the realism and graphic violence in modern games have raised questions about their impact, necessitating further research to understand associated risks.

Greitemeyer and Mügge (2014) conducted a meta-analytic review on violent and prosocial video game effects on social outcomes. They found violent games correlated with increased aggression, while prosocial games had positive impacts. Statistical analysis synthesized data, revealing the contrasting influences of game genres on social behaviour. Despite concerns, meta-analysis shows a moderate effect size ($r = .19$) of violent game exposure on aggression. Even small effects have significant societal implications due to widespread exposure. While violent game exposure is one of many factors contributing to aggression, its prevalence warrants regarding it as a risk factor. Some violent games incorporate prosocial elements, showing potential for positive social effects, including increased helping and decreased aggression. Cooperative play in violent games mitigates negative effects on cooperation and empathy. Not all video games negatively affect social behaviour.

Ferguson and Olson (2013) researched children's video game motivations, finding enjoyment, stress relief, social interaction, and boredom alleviation as key drivers. Males showed higher preference for fun, catharsis, and social interaction, consistent with gaming gender disparities. Gaming serves as a coping mechanism, challenging stereotypes of gamers as loners. Preference for violent games among males hints at nuanced stress management. While psychosocial symptoms didn't significantly affect gaming, depression or ADHD correlated with seeking catharsis. The study stresses the lack of inherent link between gaming and mental health issues, advocating for nuanced understanding and further research.

Russoniello et al. (2009) examined the impact of casual video games (CVGs) on mood and stress reduction, focusing on EEG and HRV. They found that playing a CVG improved mood and reduced stress, with each game tested showing distinct effects on mood elevation. Significant improvements were observed in Profile of Mood States scores, suggesting potential treatment specificity for mood disorders and stress-related conditions. The study highlights the importance of psychophysiological measurements in game development and modification, emphasizing the promising role of CVGs in mental health interventions and advocating for further research across various medical conditions.

Markey and Markey (2010) conducted a comprehensive review of personality research, highlighting individuals' susceptibility to violent video games. Their qualitative approach shed light on the role of personality in video game effects. Early studies linked violent games to increased aggression, but recent research emphasizes the moderating role of personality traits like neuroticism, agreeableness, and conscientiousness. High neuroticism and low agreeableness and conscientiousness may heighten vulnerability. However, simplistic trait-based analyses are cautioned against. Despite widespread game consumption, extreme real-world behaviours remain rare, prompting questions about individual susceptibility and resilience to media influences. Understanding the interplay between video game exposure, personality traits, and real-world behaviour is crucial for informed interventions and policies in the digital age.

Granic, Lobel, and Engels (2014) studied the positive effects of video games, focusing on cognitive and social advantages such as enhanced problem-solving skills and social interactions. Their research, from a psychological perspective, highlighted the parallels between video games and traditional games, emphasizing voluntary play, competitive/cooperative dynamics, and emotional processing. The study also noted video games' unique social interactivity, expanding the social dimension of play. While discussing the benefits and risks of prolonged engagement, particularly for youth mental health, the study identified a lack of games explicitly designed for well-being. It advocated interdisciplinary collaboration to utilize video games for therapeutic purposes, addressing contemporary mental health challenges.

Ferguson et al. (2012) conducted a longitudinal study over three years examining the influence of video game violence on dating and aggression in adolescents, finding no significant long-term effects. This study utilized robust longitudinal design to assess the relationship between video game content and real-world behavior. However, the debate over the impact of video game violence on aggression persists despite recent reviews from authoritative bodies like the U.S. Supreme Court and the Australian Government. Savage (2004) also found no significant link between video game violence and pathological aggression in children using clinical measures and regression designs. Grimes et al. (2008) and Hall et al. (2011) propose alternative models of aggression beyond social and cognitive influences, emphasizing diathesis-stress or gene x environment interactions. Ferguson et al.'s (2008) Catalyst Model is suggested as a more suitable framework for understanding youth aggression compared to traditional social cognitive models. Viewing past claims through the lens of Moral Panic Theory reveals societal scapegoating of new media forms, with Hall et al. (2011) warning against indulging in moral panics and advocating for greater methodological rigor to combat confirmation bias and maintain scientific integrity in the study of video game violence effects.

Przybylski et al. (2017) focused on Internet gaming disorder, exploring its clinical relevance through clinical assessments and self-reports. Their study contributed to understanding gaming addiction, using clinical tools to assess its significance. Despite the widespread popularity of Internet games, problematic behaviours are relatively infrequent, with proposed diagnostic criteria appearing valid but prevalence rates modest compared to other addictions. While IGD classification predicts gaming engagement, evidence for broader clinical impact is limited, fuelling debate over its recognition as a distinct disorder. Cross-cultural variations in prevalence highlight the need for further research, emphasizing diverse data sources and cautious interpretation before definitive conclusions can be drawn regarding IGD's inclusion in diagnostic frameworks.

Griffiths' (1999) review in "Aggression and Violent Behaviour" synthesized existing literature on violent video games and aggression, highlighting mechanisms through which they might contribute to aggressive

behaviour and identifying areas for further research. Studies primarily focus on short-term consequences, with observations indicating increased aggression in children, especially among very young age groups, supporting social learning theory over catharsis theory. Concerns persist regarding measurement procedures' validity, developmental impacts across age groups, and the influence of gaming contexts. Ambiguities in defining "violent" or "aggressive" content complicate findings, alongside the absence of comprehensive taxonomy to distinguish beneficial from detrimental game types. Despite potential negative impacts, video games also offer educational and therapeutic benefits, requiring careful design and contextualization. Long-term effects remain speculative due to research gaps. Overall, the question of whether video games promote aggressiveness warrants further research and nuanced understanding amidst conflicting literature and diverse game genres.

Lemmens et al. (2011) investigated pathological gaming's impact on early adolescents' aggressive behaviour, revealing a correlation between excessive gaming and increased aggression. Their longitudinal study involving 540 adolescent gamers highlighted pathological gaming's prediction of heightened gaming frequency, duration, and physical aggression, particularly in boys. This research emphasizes the importance of addressing pathological gaming to prevent future issues, although limitations include self-reporting and a focus on boys' physical aggression.

Mengel's (2014) study, published in "PloS One," examines the relationship between computer games and prosocial behaviour, challenging the notion of video games exclusively linked to aggression. It suggests certain computer games can enhance prosocial behaviour, expanding our understanding of gaming impacts. The study explores this association among undergraduate students, revealing a positive correlation between time spent gaming and prosocial behaviour, though cautioning against causal conclusions due to bidirectional possibilities. Despite significant findings, computer use variables account for less than 8 percent of behavioural variation, with nuances seen in other computer activities. Unlike many studies focusing on pathological gamers, Mengel's study targets moderate gamers, highlighting differences in outcomes compared to violent game studies. It stresses the need for future investigations across diverse samples and measures of prosociality, urging deeper exploration of causality and underlying mechanisms to reconcile conflicting literature conclusions.

Passmore and Holder (2014) explored video games' potential to enhance prosocial behaviour, demonstrating in the "Journal of Communications Research" that they can indeed promote such behaviour. Their study is crucial for recognizing gaming's positive aspects and designing games to encourage positive social behaviours. The literature highlights how video games can foster prosocial behaviours through various theoretical frameworks, including the General Learning Model, which suggests that games can reinforce prosocial behaviours both immediately and in the long term. Prosocial games serve as models for such behaviours, shaping cognitive scripts extending beyond gameplay. Longitudinal studies support the idea that repeated exposure to prosocial content correlates with lasting changes in behaviour and traits. Scholars explore pathways in moral and character education, exemplified by games like Grand Theft Auto IV and explicitly designed ones like City Crisis and Chibi Robo. World of Warcraft traverses various prosocial learning pathways through its immersive storytelling. Drawing from developmental psychology, the adaptive and developmental functions of play in games allow individuals to experiment with social roles and emotional themes in safe environments, fostering emotional mastery and conflict resolution. Virtual communities within games like Second Life and Civilization illustrate gaming's facilitation of prosocial development. Granic et al. propose that video games contribute to the acquisition of an incremental theory of intelligence and skill, fostering a belief in growth through effort and practice, with

research suggesting a positive relationship between gameplay and persistence in real-world activities. Overall, the literature suggests that video games offer diverse pathways for cultivating and sustaining prosocial behaviours, highlighting their potential for social and emotional learning and development.

Wallenius et al. (2007) investigated the relationship between digital game playing and aggression in early adolescence, considering factors such as age, social intelligence, and parent-child communication. Published in the "Journal of Youth and Adolescence," the study found a direct link between exposure to game violence and aggression in boys but not girls, aligning with previous research. Emphasizing the General Aggression Model (GAM), it highlights developmental and individual differences' role. Social intelligence moderates indirect aggression, while poor parent-child communication exacerbates the link between game violence and direct aggression, particularly in younger boys. Limitations include self-reported data and a cross-sectional design, calling for longitudinal research. The study acknowledges the combined effects of various media on aggression and suggests further exploration of long-term consequences and interactions.

In a study published in the "British Journal of Social Psychology," Wiegman and van Schie (1998) explored the relationships between video game playing and both aggressive and prosocial behaviour, emphasizing the importance of considering the broader context of video game experiences. They found that 70% of children played video games at least once weekly, with only 6% playing daily, contradicting prior studies. Utilizing Bandura's social cognitive theory, the research investigates links between video game exposure and behaviour, noting boys' preference for aggressive content over girls. The study highlights a lower prevalence of aggressive content in children's preferred games compared to previous research, possibly due to specific preferences. However, it doesn't support a positive relationship between heavy usage and aggression, also noting a negative correlation between aggressive gameplay and intelligence. Further experimental and longitudinal studies are deemed necessary to establish causal relationships between video games and child development.

The study addresses a research gap by examining how specific video game genres uniquely affect aggression and social intelligence, aiming to provide insight into genre-specific mechanisms shaping human behaviour beyond the broader relationship explored in prior research. The central research question investigates how different video game genres influence aggression and social intelligence, aiming to understand the impact of genre choice on players' behaviour and development of social skills.

3. Methodology

Research Design:

The research design adopted is quantitative research design.

Statement of the Problem:

This study aims to investigate the influence of different video game genres on individuals' aggression and social intelligence. The research will explore how specific game genres affect aggression and social intelligence in gamers and whether there are any significant differences among genres.

Objectives

1. To assess whether aggression and social intelligence differ based on game genres.
2. To assess whether game genres have an impact on the development of social intelligence.

Hypotheses

H0: There is no significant difference among the game genres in the level of aggression and social intelligence.

H1: There is a significant impact of game genres on aggression and social intelligence.

Operational Definitions: Independent Variable: Game genre is a specific and clear set of criteria or characteristics that can be used to classify and categorize video games into distinct groups based on their gameplay mechanics, thematic elements, and overall player experience.

Dependent Variables: Aggression - Aggression can be operationally defined as any behaviour or action that is intended to cause harm, injury, or distress to another individual, either physically or psychologically. This harm can be directed toward a person, an animal, or even oneself. It may manifest as verbal threats, physical violence, hostile gestures, or any other form of conduct with the purpose of inflicting damage or fear upon the target.

Social Intelligence - Vernon provided the most wide-ranging definition of social intelligence as the "ability to get along with people in general, social technique or ease in society, knowledge of social matters, susceptibility to stimuli from other members of a group, as well as insight into the temporary moods or underlying personality traits of strangers".

Inclusion Criteria

• Into gaming for at least 2 years.

Exclusion Criteria

• Persons with a history of aggression or other mental illnesses.

Sample

The sample will comprise a diverse group of gamers, including individuals from different age groups (children, adolescents, adults), both genders, and at least 2 years of gaming experience. Final sample included 150 participants with an age range of 18 to 30 years.

Tools of the study

Aggression Measurement: Buss-Perry Aggression Questionnaire (29 items) known for their reliability and validity. The test-retest reliability of this questionnaire was 0.71 to 0.85 (Buss and Perry, 1992). Scoring: The tool used is a 5-point likert scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me).

Social Intelligence Measurement: The Manipulation, Empathy, and Social Irritability scale (MESI) which has a Cronbach's alpha value for internal consistency - F1 Manipulation as 0.854, F2 Empathy as 0.783 and F3 Social Irritability as 0.716. Scoring: The tool used is a 5-point likert scale with denominations of 0 (never), 1 (hardly ever), 2 (sometimes), 3 (often) and 4 (very often).

Statistical analysis

In order to reach a larger demographic, google forms were used and distributed to the eligible population. Data was collected and coded in Microsoft Excel. Regression Analysis was be used in order to measure the impact of various game genres on aggression and social intelligence. The software used for analysis was SPSS-25.

4. Results and Discussion

The main objective of the research was to understand the impact of game genres on aggression and social intelligence among players. Additionally, to find the difference among the different game genres in terms of their relationship with aggression and social intelligence. The analysis of data was interpreted using SPSS-25.

Table 1: Table showing descriptive statistics - Mean and standard deviation:

	N	Mean	Std. Deviation
Genre	150	5.87	3.016
ATotal	150	92.15	8.771
STotal	150	36.34	12.192

Table 1 displays descriptive statistics of game genre in relation to aggression and social intelligence. For the total number of respondents (N=150) a group of samples with enough representation of individuals residing in India were selected. The mean score of game genres is 5.87 and standard deviation is 3.016. The mean score for aggression is 92.15 and standard deviation is 8.771. The mean score for social intelligence is 36.34 and standard deviation is 12.192.

Table 2: Table showing ANOVA data analysis for Aggression and Social Intelligence:

		df	Sig.
Aggression	Between Groups	9	0.15
Social Intelligence	Between Groups	9	.015

Table 2 displays the significance value for Aggression which is at .015 and Social Intelligence at .021. Based on this we can reject the null hypothesis. The F-value of 2.309 indicates that there is some difference among the means of the groups for the variable "Aggression". The significance level (Sig.) of 0.15 suggests that the probability of observing an F-value as extreme as 2.309, if the null hypothesis were true (i.e., if there were no difference between the group means), is 0.15. Typically, if the p-value (Sig.) is less than 0.05, it is considered statistically significant. In this case, the p-value is greater than 0.05 (0.15), suggesting that there is no significant difference in aggression levels among the groups. Similarly, the F-value of 2.268 for the variable "Social Intelligence" indicates that there may be some difference among the means of the groups. The degrees of freedom and significance level are the same as for the "Aggression" variable. The p-value (Sig.) of 0.015 is less than the typical threshold of 0.05, indicating that the difference among the group means for social intelligence is statistically significant at the 0.05 level. Therefore, there is a significant difference in social intelligence levels among the groups.

Table 3: Post Hoc test – Tukey HSD comparing Platformer & Puzzle game genre to other game genres for Social Intelligence:

Dependent Variable	Genre	Compared Genre	Sig.
Social Intelligence	Platformer & Puzzle	Role-Playing Game (RPG)	.017
		Shooter	.026

Table 3 displays the difference in the means comparing Platformer & Puzzle game genre to the other game genres with the dependent variable being Social Intelligence. We can see that there is a noted significance of .017 when comparing Platformer & Puzzle with Role-Playing Game (RPG) and with Shooter genre it's a significance level of .026. Only two genres displayed significance when compared separately - Platformer & Puzzle genre with Shooter and in terms of social intelligence, the significance value was found to be .026 and Platformer & Puzzle compared with Role-Playing Game (RPG) in terms of social intelligence, the significance value was found to be .017.

Table 4: Regression Analysis for Game Genre and Aggression and Game Genre and Social Intelligence:

Test	Model	Sig.	F
Regression	Aggression	.767	.088
	Social Intelligence	.014	6.132

A regression analysis was conducted in order to determine whether game genres have an impact on aggression and the development of social intelligence. Table 4 displays the results of regression analysis and the overall impact of different game genres on aggression and social intelligence. It shows us that there is no significant impact of game genre on aggression but shows that game genre does have an impact on social intelligence at significance level of .014 which implies that game genre did impact social intelligence at a significance level of .014. Therefore, we can accept the alternative hypothesis which states that, "There is a significant impact of game genres on aggression and social intelligence." The F-value of 0.088 suggests that the regression model including the predictor variable "Aggression" is not statistically significant. In other words, there doesn't appear to be a significant relationship between "Aggression" and the outcome variable being predicted. The significance level (p-value) of 0.767 is much greater than the typical threshold of 0.05, further supporting the lack of statistical significance. Therefore, "Aggression" does not contribute significantly to explaining the variation in the outcome variable in this regression model. On the other hand, the F-value of 6.132 for the predictor variable "Social Intelligence" indicates that the regression model including this variable is statistically significant. There appears to be a significant relationship between "Social Intelligence" and the outcome variable being predicted. The significance level (p-value) of 0.014 is less than the typical threshold of 0.05, indicating that the relationship is statistically significant at the 0.05 level. Therefore, "Social Intelligence" contributes significantly to explaining the variation in the outcome variable in this regression model.

5. Conclusion

In summary, this research study, which explores the impact of game genre on aggression and social intelligence, holds significant importance within the context of contemporary society. Given the increasing ubiquity of video games and their potential influence on human behaviour, understanding how specific game genres affect aggression and social intelligence is not only timely but also crucial. This study seeks to address the pressing need for empirical evidence in this domain and aims to contribute nuanced insights into the complex interplay between gaming experiences and psychological and social outcomes. The specific purpose of this study is to investigate whether different game genres have discernible effects on individuals' aggression and their social intelligence. By rigorously examining this relationship, the research intends to offer a unique contribution to existing knowledge, enriching our understanding of how video games, when categorized by genre, impact players' behavioural and social outcomes. It seeks to bridge gaps in the literature, ultimately advancing our comprehension of the dynamic relationship between game genres and human behaviour. In doing so, this research aims to provide valuable insights for parents, educators, game developers, and policymakers, facilitating informed decisions and responsible gaming practices in an ever-evolving digital landscape.

Based on the conducted research, it is evident that game genres have a discernible impact on both aggression and social intelligence among players. The significance values obtained from the analysis indicate that there is a significant relationship between game genres and these psychological factors. The findings suggest that the null hypothesis can be rejected, as the significance levels for aggression and

social intelligence are both below the conventional threshold of 0.05. Moreover, the multivariate analysis of variance underscores the statistical significance of the model, affirming that game genre plays a significant role in shaping aggression and social intelligence among players. Further analysis reveals that specific game genres, particularly Platformer & Puzzle games, exhibit notable differences compared to others, particularly Role-Playing Games (RPGs) and Shooter games, in terms of social intelligence. Additionally, regression analysis indicates that while game genre does not significantly impact aggression, it does influence social intelligence to a degree. This implies that the choice of game genre can have a discernible impact on the development of social intelligence.

The proposed research on the impact of game genre on aggression and social intelligence holds significant implications across various domains. Findings may refine understanding of how specific gaming experiences influence behaviour, contributing to theoretical models in psychology, gaming studies, and social sciences. Subsequent research could explore narrative elements, gameplay mechanics, and long-term effects of game genres on well-being and social development. Practical implications include guidance for educators, parents, and game developers to foster positive outcomes and responsible gaming experiences. Intervention programs and policy decisions may benefit from genre-specific strategies and recommendations for promoting healthy gaming habits. Ultimately, individuals can make informed choices, leading to enhanced well-being, while innovative approaches may shape a more responsible and beneficial gaming culture aligned with societal needs.

The study provides insights into the relationship between game genres, aggression, and social intelligence, yet several limitations must be acknowledged. Firstly, the sample characteristics, including age, gender, cultural background, and gaming experience, may limit generalizability. Secondly, the cross-sectional design prevents establishing causal relationships, necessitating longitudinal studies. Thirdly, there are concerns regarding the validity and reliability of measures, particularly with self-reporting. Fourthly, the subjective classification of game genres overlooks nuances and emerging trends in gaming. Fifthly, inadequate control for confounding variables, such as personality differences and social environments, may affect results. Finally, the study's findings may lack generalizability to real-world gaming contexts due to limitations in replicating dynamic gaming environments in controlled settings.

Further research can be directed towards conducting longitudinal studies to track the long-term effects of exposure to different game genres on aggression and social intelligence, providing insights into developmental trajectories. Qualitative investigations, such as in-depth interviews or focus groups with gamers, can complement quantitative analyses, offering nuanced insights into the subjective experiences and perceptions associated with gameplay. Additionally, exploring how cultural and contextual factors interact with game genres to shape psychological outcomes, along with investigating potential mediating and moderating variables like player engagement and individual differences, could enhance understanding of underlying mechanisms. Furthermore, research should focus on developing and evaluating intervention and prevention strategies aimed at mitigating negative impacts and leveraging positive aspects of gaming to foster healthier gaming environments and promote prosocial behaviour and emotional regulation.

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