How does violence and death in video games affect adolescents' perception of death and violence in real life in the area of North Rhine-Westphalia?

Paul Szelag (5496535) and Anna Varga (5378192)

December 9th 2025
Module: ARDA
Fontys University of Applied Science - Informatics
Venlo, Limburg, Netherlands

Abstract

This is the abstract.

Contents

1 Introduction

Video games have become one of the most prevalent forms of entertainment among adolescents across the globe, with violent and death-related content present in many popular titles (*e.g. Call of Duty, Fortnite, Grand Theft Auto*). Existing rating systems such as PEGI (EU) and ESRB (US) (Tompson and Haninger 2004) already flag the degree of violent realism in these games, reflecting widespread public concern about the effects of such content on young people's development and moral reasoning.

1.1 Background and significance

Discussions over whether violent video games influence aggressive attitudes or behavior have continued since these games first appeared. Meta-analyses and longitudinal studies have produced mixed results, with some suggesting that frequent exposure to violent or dark-themed games may increase tolerance toward aggression and reduce empathic concern for others (Anderson and Bushman 2018; Bushman et al. 2025). Other large-scale and well controlled studies, however, found little to no direct causal link between exposure to violent game content and real-world aggression once individual traits and prior aggression are accounted for (Przybylski and Warstein 2019; Lacko, Machackova, and Smahel 2024).
Although large-scale violent events such as school shootings and public attacks reopen public debates about the role of violent media, including video games, in fostering aggressive tendencies, empirical evidence connecting real-world violent incidents and video game consumption remains correlational and far from conclusive (Ramasubramanian and Banjo 2020). Still, the perception that violent video games might normalize aggression or death sustains an important social as well as scientific question: **how does repeated exposure to virtual violence shape adolescents' moral reasoning, emotional responses to and perception of real-world violence and harm and how different are these affects within the same demographic group?**

1.2 Psychological mechanisms

From a psychological perspective, video games can engage several mechanisms, such as reward-processing systems, that reinforce and justify aggressive acts. In many games players are rewarded with (Experience-) points, level-ups, in-game items or currency after committing violent or unjustful acts, such as slaying enemies or stealing from non-player characters (NPCs). This rewarding may strengthen the player's association of a positive outcome with aggressive behavior, potentially leading to desensitization toward violence over time (Carnagey, Anderson, and Bushman 2007). Additionally, the immersive and interactive nature of video games allows players to actively participate in violent scenarios, which may enhance the emotional impact and identification with aggressive characters. Furthermore, these games often lack realistic consequences for violent actions, which could distort players' understanding of the severity and impact of violence in real life. And finally, in these games death is often portrayed in a trivialized or gamified manner, where characters can respawn

or continue playing after being killed, potentially diminishing the perceived gravity of death and harm (Hartmann, Krakowiak, and Tsay-Vogel 2014).

1.3 Gender differences

Gender differences may also play a role in how violent video games affect adolescents. Research indicates that boys statistically play more violence and competitive-/combat-driven games than girls, who tend to prefer narrative-driven and cooperative experiences (Walkerdine 2007; Hartmann and Klimmt 2017). This differential exposure could lead to differences in moral reasoning and emotional responses to violence if viewed as normative behavior within their gaming communities. Furthermore, societal norms and expectations around masculinity and aggression may further shape these experiences and responses.

1.4 Societal and developmental relevance

Investigating the impact of adolescents' perception of violence and death in video games is especially relevant given that adolescents are in a critical developmental stage where moral reasoning and empathy are still maturing (Blakemore and Robbins 2012), and they are particularly susceptible to peer influence and media effects (Steinberg 2008; Fikkers et al. 2016). Adolescents are also in the process of forming their identity and understanding social norms, making them especially vulnerable and receptive to media messages, including those related to violence and death (Avci, Baams, and Kretschmer 2024). Furthermore, adolescents' digital lives often blur the boundaries between fantasy and reality, especially in immersive or multiplayer environments.

The issue is not only theoretical but also practical. Given the rise of interest in game and app development, understanding how reward systems and death depictions shape users' psychological responses can lead the creation of games that are engaging, yet ethically and emotionally responsible. Integrating psychological insights into game design could help developers build interactive experiences that foster empathy, prosocial behavior, and critical thinking about violence rather than desensitization or normalization of harm.

1.5 Research question and hypotheses

This study aims to investigate how exposure to violent and death-related content in video games influences adolescents' moral reasoning, emotional responses, and behavioral tendencies. Specifically, the research will explore whether frequent exposure to violent/death content is associated with increased tolerance for aggression, reduced empathy, and altered moral judgments concerning harm to others.

Based on desensitization and aggression models, we hypothesize that:

1. Greater exposure to violent/death-related game content correlates with higher acceptance of aggression and reduce empathy for pain and suffering in real life.

2. Games that reward aggressive actions will amplify these associations compared to games without such reward systems.

3. These relationships will differ by gender, with stronger effects expected among boys.

Addressing these questions can clarify whether interactive violent content merely reflects existing preferences or actively shapes and contributes to perceptual, moral and emotional desensitization. Understanding these dynamics is crucial for informing parents, educators, policymakers and game developers about potential risks and ethical considerations in adolescent media consumption.

2 Methodology

2.1 Research Design

This study will employ a single-methods approach using quantitative data collection through structured questionnaires. The data collection will involve administering standardized questionnaires with the aim to assess whether adolescents' exposure to violent and death-related content can be associated with changing perceptions of violence, moral reasoning, emotional responses and behavioral tendencies.

2.2 Participants

The target for this study is adolescents aged 12 to 20 years devided into two age groups. A sample size of approximately 100-200 participants will be recruited from secondary schools to ensure a sufficient and diverse representation. The geo-locational focus will be the set on urban and suburban regions within Nordrhine-Westphalia, Germany.
For inclusion in the study, participants must access to video games at least twice a week. To ensure ethical compliance, informed consent will be obtained from all participants and participation will be voluntary, anonymous and in accordance with ethical guidelines. For participants under the age of 14, parental consent will also be required. To ensure the upholding of the ethical standards of research involving minors, the questionnaires will only be made available to the students by the teachers and parents with no direct contact from our side. A secondary target group of parents and teachers may also be surveyed to gather additional contextual information on adolescents' gaming habits and parental mediation strategies.

2.3 Materials and Measures

A structured questionnaire will be developed to assess the key constructs of interest. The questionnaire will include validated scales and self-report items to measure:

- **Exposure to video games:** Frequency and duration of video games played, with a focus on violent and death-related content.

  e.g., "How often do you play video games?", "Do you play games that involve violence or death?"

- **Rewarding and supporting of aggressive acts:** Assessment of the extent to which the games played reward and support aggressive behavior.

  e.g., "In these games, how often does the gameplay require you to perform aggressive actions to succeed?", "In these games, how/ how often are aggressive actions rewarded?"

- **Moral reasoning about violence:** Using established scales such as the Aggression Acceptance Scale (AAS, Anderson and Bushman 2018) to measure attitudes toward aggression.

e.g., "Is it acceptable to hit someone who insults you?", "Is it okay to use violence to solve problems?"

- **Perception of death and empathy for pain:** Utilizing instruments like the Basic Empathy Scale (BES) or the Empathy for Pain Questionnaire (Miedzobrodzka et al. 2023) to assess emotional and cognitive empathy toward others' suffering.

  e.g., "When I see someone get hurt, I feel sorry for them.", "I can understand how others feel when they are in pain."

- **Demographics and Gender:** Collecting information on the participants age and gender to explore potential moderating effects.

- **Control variables:** Including measures of average weekly playtime, game genre preference (competitive, narrative, cooperative), parental mediation (restrictive / active), and prior aggression incidents.

All questionnaires will be administered in English and will have a German translation available to ensure comprehension amongst all participants.

2.4 Procedure

The Procedure follows the same structure for all participants. Access will be made available with a link to the online questionnaire.

1. **Distribution:** The distribution will be handled through teachers and parents in the selected school in Nordrhine-Westphalia.

2. **Consent:** Prior to participation the questionnaire will inform the adolescents that participation is entirely voluntary. It will inform that children under the age of 14 have to take the survey with parental consent. Anonymity and confidentiality will be assured.

3. **Questionnaire sequence:**

   Introduction, consent confirmation and short briefing

   Demographics, age and gender

   Video game exposure and habits

   Perception of violence, empathy and moral disengagement

3 Results

3.1 Sample Characteristics

Age Distribution

A total of 118 participants were included in this study: 118 students (aged 12-20 years), with corresponding data from parents. As shown in Figure 1, the student sample was concentrated in the younger to mid-adolecent age ranges with relatively even distribution. The 12-14 age group accounted for 35% of students (36% of parents), the 15-17 age group accounted for 40% of students (36% of parents), and the 18-20 age group accounted for 25% of students (28% of parents). This shows a good spread accross the adolescent age range with a slight but negligible underrepresentation of older adolescents. The close alignment between student and parent age reporting demonstrates convergent validity and confirms that parent-child correspondence was maintained in the data collection process.

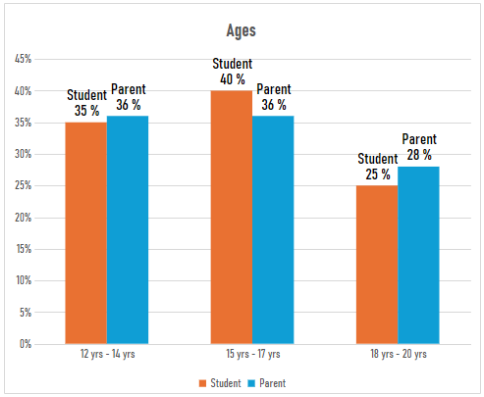

Figure 1: Age Distribution of Student and Parent Participants

Gender Distribution

As presented in Figure 2, gender distribution was relatively balanced among student participants, with males representing a slight majority. The difference of 7% between male (52%) and female (45%) students was minimal, indicating a fairly even gender representation in the sample and as such does not suggest a signifficant gender bias in participation. An additional 3% of students identified as non-binary or preferred not to disclose their gender. This balanced distribution enables exploration of gender differences across gaming behaviours and outcomes.

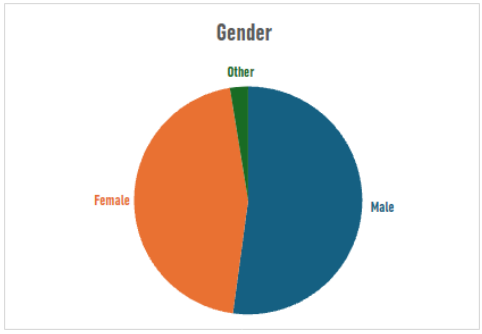

Figure 2: Gender Distribution of Student Participants

3.2 Gaming Duration and Frequency

Average Daily Gaming Time

Figure 3 represents the distribution of average daily gaming hours across the students. The data reveals a distinctly tendency toward moderat engagement patterns: 30% reported 1-2 hours, 30% reported 2-3 hours, and 20% reported less than 1 hour of gaming per day. Only a small minority (8%) reported gaming for more than 4 hours daily. This indicates that while gaming is a common activity, excessive daily gaming is relatively uncommon in this adolescent sample. Cumulatively, 75% of students reported engaging in gaming for 0.5-3 hours daily. Extreme gaming intensities (exceeding 5 hours daily) were rare, reported by only 3% of participants, whilst 5% reported 4-5 hours and 12% reported 3-4 hours. The distribution approximated normality around a modal value of 2-4 hours daily, whith extrem outliers representing distribution tails rather than normative engagement patterns.

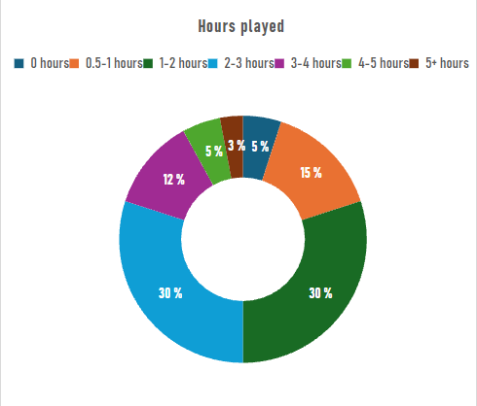

Figure 3: Average Daily Gaming Time Among Students

Notably, these moderate patterns contradict assumptions about widespread gaming addiction (Wang et al. 2014). The finding that the modal category of 2-4 hours falls within leisure-time recommendations and that exessive gaming (more than 5 hours) remains rare suggests that gaming constitutes a normative leisure activity rather than a pathological behaviour in this adolescent cohort.

Gaming Frequency Per Week

As illustrated in Figure 4, the frequency with which students engage in gaming across a typica week shows a great concentration in the mid-range reaching as high as 24% at 3 days a week. Specifically, 5% of students reported gaming 0 days a week, which correlates who reported 0 hours of daily gaiming. The largest proportion of students (48%) reported gaming 3-5 days per week, with 24% gaming 3 days, 19% gaming 4 days and 15% gaminig 5 days weekly. A further 16% reported gaming 6 (10%) -7 (6%) days

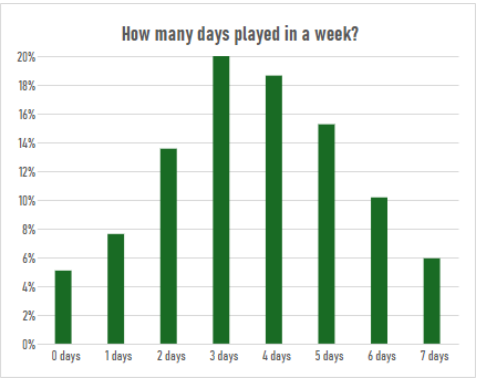

Figure 4: Gaming Frequency Per Week Among Students

per week, indicating daily or near-daily engagement. Another 21% reported gaming 1 (8%) - 2 (14%) days weekly. This distribution indicates that while daily gaming is not the norm a substantial minority of students engage in gaming on most days of the week.

The heterogenous frequency distribution, combined with moderate daily gaming durations, indicates substential interindividual variation in cumulative gaming intensity. When combining frequency and duration data, this exposure can range from minimal (e.g., 0.5 hours on 1 day) to substantial (e.g., 5+ hours on seven days). This variability highlights the importance of considering both dimensions when assessing gaming behaviours and potential impacts.

3.3 Gaming Context and Social Engagement

Solo Versus Social Engagement

Figure 5 presents the student and parent perspectives on whether adolecents played alone or with friends. A striking difference emerges between student self-reports and parent perceptions. From the students perspective, 12% reported gaming solely with friends, as much as 29% reported gaming primarily with friends, 26% reported gaming equally alone and with friends and 18% reported playing primarily alone. Only 15% reported gaming exclusively alone. In contrast, parents precieved a much higher prevalence of solitary games with 19% reporting their child games exclusively alone and as much as 31% reported their child gaming primarily alone. Only 8% said their child only plays with friends and another 18% said their child primarily plays with friends. This discrepancy suggests that parents may underestimate the social dimensions of their children's gaming activity.

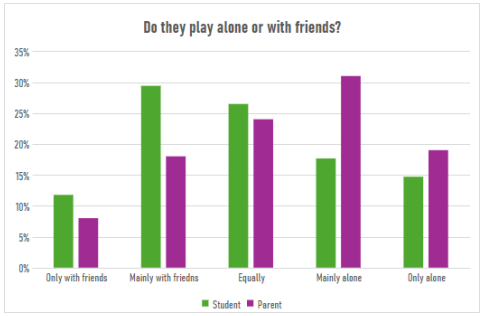

Figure 5: Solo Versus Social Gaming Engagement Among Students

The data indicates that while a substantial portion of adolescents do engage in social gaming, a significant minority also games alone. The divergence between student and parent reports highlights potential gaps in parental awareness of their children's gaming contexts. This has implications for understanding the social versus solitary nature of adolescent gaming and the need for parental education regarding gaming behaviours.

Game Preferences and Genre Selection

Figure 6 presents the types of games most frequently played by students. Shooter are the most popular genre, with 61% of students reporting reglar engagement. This ios followed by Sandbox games (49%), Role-Playing Games (RPGs) (37%), Open World Games (28%), Sport games (23%) and Story Games (19%). This distribution indicates a strong preference for action oriented gaming experiences among adolecents, with shooters and sandbox games dominating the landscape. The popularity of RPGs and open world games also suggests an interest in immersive, narrative driven experiences. Less popular genres such as sports and story games indicate more niche interests. Overall, the genre preferences reflect a diverse range of gaming tastes within the adolescent cohort, with a clear leaning toward action and adventure oriented titles. It also suggests a tendency towards mostly shortlived and fast-paced gaming experiences rather than slow-paced and strategic ones.

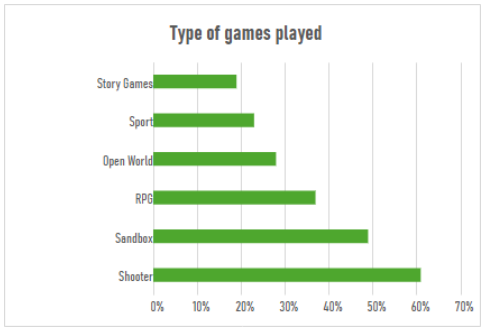

Figure 6: Game Genre Preferences Among Students

3.4 Emotional Engagement with IN-Game Violence

Happiness during Violent In-Game Actions

As illustrated in Figure 7, students reported varying levels of happines when engaging in violent actions within games. A majority of 76% reported feeling happy (46% always, 30% sometimes) when perfoming violent acts in games. In contrast only 24% reported never enjoying violent acts in game or getting joy out of them. This indicates that for most adolecents, engaging in violent gameplay is assosiated with positive emotional experiences. A notable difference can be oberved between male and female adolescents. As for male students, as much as 62% rewarted always enjoying violent in-geme acts and another 23% reported sometimes enjoing them. In contrast only 42% of female adolescents reported always enjoying violent acts in game with another 34% reporting sometimes enjoying them. This suggests that male adolescents derive greater happines from violent

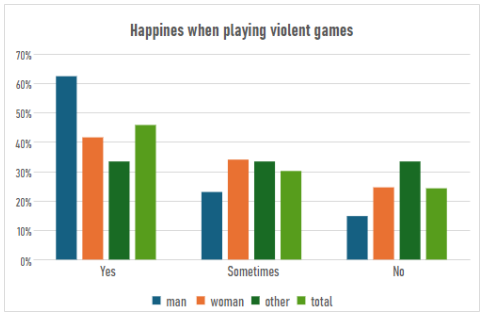

Figure 7: Happiness Levels During Violent In-Game Actions Among Students

gameplay compared to their female counterparts and are as such more emotionally engaged by violent in-game actions.

3.5 Behavioral Outcomes Related to In-Game Violence

Aggression Level after prolonged Gaming

Figure 8 depics the aggressional changes in adolescents after prolonged gaming sessions as seen by the parents.

1. **No change:** A majority of 52% reported **no increase in aggression** after extended gaming periods, indicating that for many adolescents, gaming does not elicit heightened aggressive feelings.

2. **Decrease:** Interestingly, 18% of parents observed a **decrease in aggression** in their children following prolonged gaming sessions. This suggests that for some adolescents, gaming may serve as a stress-relieving activity that helps to reduce feelings of aggression.

3. **Increase:** Conversely, 23% of parents reported an **increase in aggression** after their children engaged in extended gaming. This indicates that a subset of adolescents may experience heightened aggressive feelings as a result of prolonged gaming exposure.

4. **significant Increase** A small minority of 7% of parents observed a **significant increase in aggression** following extended gaming sessions, suggesting that for a few adolescents, gaming may exacerbate aggressive tendencies to a notable degree.

Combined, 70% of parend reported either no change or a decrease in aggression after prolonged gaming, suggesting that for the majority of adolescents, gaming does not lead to increased aggressive feelings. However, the 30% of parents who observed an increase in aggression indicates that a significant minority of adolescents may be susceptable to gaming-related agression. This highlights the need for further investigation into the factors that may mediate or moderate the relationship between gaming and aggression.

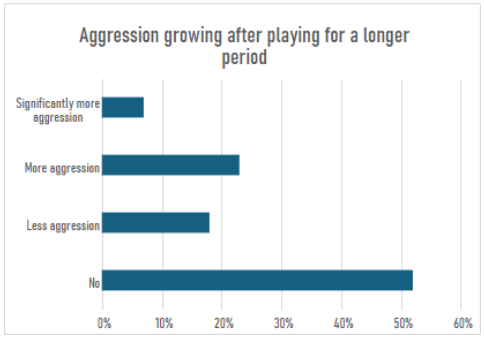

Figure 8: Self-Reported Aggression Levels After Prolonged Gaming Among Students

References

Anderson, C. A. and B. J. Bushman (2018). "Media Violence and the General Aggression Model". In: *Journal of Social Issues* 74.2, pp. 386–413.

Avci, H., L. Baams, and T. Kretschmer (2024). "A Systematic Review of Social Media Use and Adolescent Identity Development". In: *Adolescent Research Review* 10.2, pp. 219–236. DOI: https://doi.org/10.1007/s40894-024-00251-1.

Blakemore, S.-J. and T. W. Robbins (Sept. 2012). "Decision-making in the adolescent brain". In: *Nature Neuroscience* 15.9, pp. 1184–1191. DOI: https://doi.org/10.1038/nn.3177.

Bushman, B. J. et al. (2025). "Violent Video Games and Aggression". In: *Handbook of Children and Screens: Digital Media, Development, and Well-Being from Birth Through Adolescence*. Ed. by D. A. Christakis and L. Hale. Cham: Springer Nature Switzerland, pp. 581–587. DOI: https://doi.org/10.1007/978-3-031-69362-5_79.

Carnagey, N. L., C. A. Anderson, and B. J. Bushman (2007). "The effect of video game violence on physiological desensitization to real-life violence". In: *Journal of Experimental Social Psychology* 43.3, pp. 489–496. DOI: https://doi.org/10.1016/j.jesp.2006.05.003.

Fikkers, K. et al. (2016). "The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression". In: *Media Psychology* 19.

Hartmann, T., M. Krakowiak, and M. Tsay-Vogel (2014). "How violent video games communicate violence: A literature review and content analysis of moral disengagement factors". English. In: *Communication Monographs* 81.3, pp. 310–332. DOI: https://doi.org/10.1080/03637751.2014.922206.

Hartmann, T. and C. Klimmt (July 2017). "Gender and Computer Games: Exploring Females' Dislikes". In: *Journal of Computer-Mediated Communication* 11.4, pp. 910–931. DOI: https://doi.org/10.1111/j.1083-6101.2006.00301.x.

Lacko, D., H. Machackova, and D. Smahel (2024). "Does violence in video games impact aggression and empathy? A longitudinal study of Czech adolescents to differentiate within- and between-person effects". In: *Computers in Human Behavior* 159, p. 108341. DOI: https://doi.org/10.1016/j.chb.2024.108341.

Miedzobrodzka, E. et al. (2023). "Desensitized gamers? Violent video game exposure and empathy for pain in adolescents – an ERP study". In: *Social Neuroscience* 18.6. PMID: 37990996, pp. 365–381. DOI: https://doi.org/10.1080/17470919.2023.2284999.

Przybylski, A. K. and N. Warstein (2019). *Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report*. 2. DOI: https://doi.org/10.1098/rsos.171474.

Ramasubramanian, S. and O. O. Banjo (May 2020). "Critical Media Effects Framework: Bridging Critical Cultural Communication and Media Effects through Power, Intersectionality, Context, and Agency". In: *Journal of Communication* 70.3, pp. 379–400. DOI: https://doi.org/10.1093/joc/jqaa014.

Steinberg, L. (2008). "A social neuroscience perspective on adolescent risk-taking". In: *Developmental Review* 28.1. Current Directions in Risk and Decision Making, pp. 78–106. DOI: https://doi.org/10.1016/j.dr.2007.08.002.

Tompson, K. M. and K. Haninger (2004). "Content and ratings of teen-rated video games". In: *JAMA* 291.7. DOI: https://doi.org/10.1001/jama.291.5.856.

Walkerdine, V. (2007). *Children, Gender, Video Games: Towards a Relational Approach to Multimedia*. Palgrave Macmillan. DOI: https://doi.org/10.1057/9780230235373.

Wang, C.-W. et al. (2014). "Prevalence and correlates of video and internet gaming addiction among Hong Kong adolescents: a pilot study". In: *The Scientific World Journal* 2014, p. 874648. DOI: https://doi.org/10.1155/2014/874648.