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The Physical and Mental Effects of Video Gaming on an Individual's Well-being

Introduction

For decades, “politicians have long been trying to link violent video games to a person’s likelihood to commit mass violence or hate crimes,” and they have been blaming gaming for the “glorification of violence in our society” (Nove). With video gaming consoles becoming commonplace in homes, parents, scientists, and the media question whether or not these statements are factual, and they wonder if gaming is causing adverse effects on adolescents' physical and mental health. In reality, no scientific study has been able to demonstrate that a link between video gaming and violence exists. Despite the media continuously portraying video gaming in a negative light, research shows that the use of video games during childhood does not increase the likelihood of one developing aggressive behavior or violent actions. Furthermore, despite the stigma that video gaming leads one to become antisocial and withdrawn from physical activity, certain genres of games are shown to help the user develop and practice social skills, and they are shown to have positive effects on one’s physical health. Additionally, video gaming is not shown to have any negative consequences on one’s development into adulthood, and all adulthood markers are still achieved, even if video gameplay reaches 14 hours a week. Overall, video gaming can have many positive effects on one's physical and mental health, and any negative effects that are highlighted in the media, are often symptoms of other external stressors or preexisting conditions.

Why is Society Fearful of Video Games?

The Media's influence on how Video games are Portrayed

Although video games have existed for quite some time, in the late 2000s, video gaming began receiving increased attention in the media. This increased publicity was due to statements made by politicians in which they would correlate video gaming with violent behavior, stating that children are likely to mimic the behavior they see on screen and become desensitized to violent images. For example, in 2019, President Donald Trump was talking about the 2012 Sandy Hook shooting, and he suggested that taking a firm stance against violent video games is one way to prevent mass shootings (Timm). Similarly, “after a mass shooting in Dayton, Ohio, House Minority Leader Kevin McCarthy (R-Calif.) offered his take on what helped fuel the latest round of unspeakable violence: Video games that ‘dehumanize individuals’”(Bella). Although these statements made by politicians were not backed by scientific research, they were capable of convincing the majority of the public that there was a direct correlation between video games and the development of aggressive behavior. Research shows that video games are not the cause of violence; however, “74% of adults still believe video games are at least partly responsible for violence in real life” (Latnisky and Ueno).

Video Games and Violent Behavior

Despite what is being portrayed in the media about video games and violence, “Federal crime statistics suggest that serious violent crimes among youths have decreased since 1996, even as video game sales have soared” (“Violent Video Games and Young People - Harvard Health Publishing”). Additionally, new studies show that many of the previous meta-analyses that correlated violent video games with increased “violent behaviors, decrease in empathy, and prosocial behaviors” utilized “improper control groups and convenience samples,” which skewed

results (Latnisky and Ueno). Furthermore, other studies show that aggressive behavior is “influenced by individual and socio contextual variables that are not related to video games” (Halbrook et al.). This means that many of the previous studies that have found a correlation between video gaming and an increase in violence have failed to account for an individual's external risk factors and therefore, their results are invalid.

Not only has research proven previous studies about violence and video gaming to have invalid results, but a new study, conducted by The Royal Society in 2019, further proves that there is no association between violent video games and an increase in aggressive behavior (Przybylski and Weinstein). In this study, British adolescents aged 14 to 15 were surveyed on their game time and what types of video games they played (Przybylski and Weinstein). This data was quantified using a previously used gaming engagement measure. The types of games were sorted using European Union and North American Media rating systems, and “carers provided evaluations of their adolescents' aggressive behaviors in the past month” (Przybylski and Weinstein). The results of this study showed that “violent video gameplay is not a statistically or practically significant correlate of their aggressive behavior as judged by carers” (Przybylski and Weinstein). In other words, the study showed that “adolescents were not more or less likely to engage in aggressive or prosocial behaviors as a function of the amount of time they devoted to playing violent games” (Przybylski and Weinstein). Furthermore, the “pattern of findings further suggests that links reported in the literature might be influenced by publication bias, selective reporting, or an artifact of unobserved or hidden moderators” (Przybylski and Weinstein). This research report is essential as it is able to disprove one of the leading media rumors about video gaming by showing that there is no connection between video gaming and the development of aggressive behavior.

The Positive Effects of Video Gaming

Exergames

Even though the media and parents are certain that video gaming causes more harm than good, research shows that playing video games can benefit one's physical and mental health. Many parents fear that their child will become an "overweight teenager, cloistered in his room, and caught up in an increasingly realistic interactive fictional universe, in which he trains to destroy other virtual characters with determination;" however, many types of video games, particularly, exergames, are shown to positively impact one's physical health (Besomebes and Maillot). Exergames are video games that require the player to interact physically with the game to control an on-screen character, and it is shown that they encourage the user to engage in physical activity (Halbrook et al.). "Studies show that engaging in an exergame regimen significantly improves balance, flexibility, braking force, lower-limb muscle strength, maximal oxygen levels, and heart rate" (Halbrook et al.). Furthermore, exergames are shown to have significantly higher levels of enjoyment compared to traditional exercise (Halbrook et al.). For example, a study found that patients with multiple sclerosis were more likely to adhere to an exergame-based intervention over a six-month period than conventional exercise (Halbrook et al.). The positive physical effects of engaging in exergaming show that video gaming does not lead to a decrease in physical activity or negatively impact one's physical health; in fact, due to their higher level of enjoyment, exergames can encourage users to implement and stick to a fitness routine.

Aside from benefiting one's physical health, exergames can also positively support physical and cognitive learning (Besomebes and Maillot). Nonmotor video games, motor video games, sedentary video games, and active video games all have different effects on an

individual's mental health (Besombes and Maillot). When an individual plays an exergame, they are “not only reduced to the strictly mechanical aspects of his (physical) body when interacting with the control device but he also expresses the tactical aspects of the psychological and cognitive facets of his body (intentional, emotional, sensory, etc.) that determine his action choices in the game” (Besombes and Maillot). This shows that exergames are capable of engaging both the mind and body and that they challenge the player’s emotional and sensory responses. The cognitive and physical skills that one gains from gaming can be applied to school, work, and therapeutic dimensions (Besombes and Maillot).

Entertainment Gaming

Exergames are not the only type of games that can benefit one’s well-being; entertainment games, or games made just for user enjoyment, are also shown to impact one's abilities positively (Besombes and Maillot). In most cases, entertainment games are shown to improve one’s hand-eye coordination (Besombes and Maillot). For example, “the practice of First-Person Shooter video games,” such as *Half Life* or *Call of Duty*, “allows the development of fine skills in the hands, transferable in the context of performing robotic-assisted surgical operations like laparoscopies. The use of robotic hands, whose gestures are ordered remotely by the surgeon who executes them in front of a control screen, is very much improved (33% faster and 37% fewer errors) by the weekly practice of action video games” (Besombes and Maillot). This statistic is significant as first-person shooter video games are often the ones that are highlighted in the media for possibly causing aggression; however, as shown, they can be very beneficial in helping one’s hand-eye coordination.

Not only are entertainment games capable of improving hand-eye coordination, but they are also able to help improve the overall cognitive function of the elderly (Besombes and

Maillot). Brain training games, which are a subsection of entertainment games, consist of exercises such as memorization tasks, arithmetic, or reading, that aim to improve cognitive function (Besombes and Maillot). Engaging in brain training games is shown to improve “long-term memory (episodic and sensory), spatial orientation, cognitive flexibility, environmental decoding, information processing, planning, and ability to multitask simultaneously” (Besombes and Maillot). Overall, engaging in exergames is shown to help reduce the mental effects of aging.

Video Games and Social Activity

Despite the stigma that video games make one become antisocial, many video games are shown to be beneficial to one’s psychological well-being because they encourage social activity (Halbrook et al.). Video games that have social features, such as a chat room, or the ability to interact with other live players via headset, provides players with an alternative social outlet and simulates in-person contact, which positively impacts one’s physiological wellbeing (Halbrook et al.). These social features are beneficial as they “might promote enjoyable social contact for those in remote locations, with psychological difficulties, or with other factors that can inhibit in-person interaction” (Halbrook et al.). Furthermore, “this is further supported by a study that indicated that individuals high in attachment avoidance can gain secure attachment functions from participating in social online video-game interaction, in that they can use these social video games to seek social interaction that suits their particular attachment needs” (Halbrook et al.). Social video games are also shown to encourage cooperation, communication, and friendship (Halbrook et al.). A study involving school children showed that these positive relationships and skills are often maintained outside of the game (Halbrook et al.). The social aspect of video

gaming can help one develop their social interaction skills and provides those who cannot engage in in-person interaction with an alternative outlet.

The Effects of Video Gaming and One's Transition into Adulthood

Not only does video gaming have positive effects on one's overall health, but research also shows that video gameplay during adolescence does not lower the chance of successful transition into adulthood, which is one of the main concerns of parents. A study found that video games do not appear to be harmful and that adverse effects on the transition to adulthood were only associated with gameplay that was over 14 hours per week (Latnisky and Ueno). The study analyzes the National Longitudinal Study of Adolescent to Adult Health and utilizes a life course perspective to ensure that the research accounts for the changing social context and external factors that could alter the results (Latnisky and Ueno). For example, this study accounted for a new life stage called "emerging adulthood," which is a stage that "resulted partly from the expansion of higher education and the delays of first marriage and parenting" (Latnisky and Ueno). This stage is important as it is "characterized by self-exploration and development of personal networks through leisure activities and hobbies," which video gaming would fall under (Latnisky and Ueno). The study tested whether or not video gameplay implies a risk that it delays the transition to adulthood by evaluating whether video gameplay in adolescence reduces the likelihood of obtaining adulthood markers (Latnisky and Ueno). As mentioned, the findings concluded that video games do not appear to be harmful to one's transition to adulthood. Overall, the research finds that even at fairly high levels, video gameplay is not problematic for transition to adulthood (Latnisky and Ueno). "It is instead an increasingly common part of everyday life with no immediate or inherent negative consequences for an individual's transition to adulthood" (Latnisky and Ueno).

The Possible Harmful Effects of Video Games and How they can be Avoided

The Development of Gaming Disorder and other Physical Ailments

Although one's mental and physical health can benefit from playing video games, there are instances where video gaming can cause harm to an individual. As of 2018, the World Health Organization officially "classified Gaming Disorder in their International Classification of Diseases," which is a disease that can develop from excessive video gaming (Ayenigbara). "A person with Gaming Disorder will demonstrate the following characteristics for at least twelve months: problems controlling their gaming habits, seeing gaming as more important over other necessities and daily activities or work, continuing to engage in gaming even after its negative health and social problems have been identified or are evident" (Ayenigbara). It is "estimated that about 8.5% of youth exhibit video gameplay addiction, concluding these addicted youths had a higher likelihood of attention problems and worse grades" (Latnisky and Ueno). Additionally, it is noted that "first-year college students with video game addiction had lower expectations for social engagement and lower GPAs at the end of their first year of college" (Latnisky and Ueno). Overall, someone diagnosed with Gaming Disorder is likely to suffer from severe withdrawal from society, and it is expected that their everyday life will be significantly impacted as they begin to become consumed with gaming.

Excessive video gaming can also lead the user to develop other physical ailments. One common problem that video gaming is associated with is eye issues. "Extensive and fixed staring at a video game screen causes eye strain," which can result in "headaches, dizziness and in some cases nausea" (Ayenigbara). Additionally, persistent gaming may lead to the development of musculoskeletal problems (Ayenigbara). Video gamers who play excessively are likely to

develop tendonitis, tendon injuries of the hands and wrists from tendon overuse, and in extreme cases, hand fractures have been reported (Ayeigbara).

Although these video gaming side effects are severe, research shows that they can be avoided as long as game time is limited. Additionally, although there are some cases where video gaming causes physical health problems, there are also cases where it has helped to improve existing ailments (Ayenigbara). For example, regarding vision, “gamers have an enhancement of spatial distribution of attention, compared with non-gamers” (Ayenigbara). Furthermore, it also showed that sufferers of amblyopia, “a blurring of the eyesight due to a fault in the transmission from the eye to brain,” may benefit from video game therapy and regain visual acuity (Ayenigbara). This shows that as long as game-time does not become excessive, video gaming is likely to have more positive effects on one’s mental and physical health than negative ones.

Outside Stressors' impact on Diagnosis and Development of Gaming Disorder

Although the effects of Gaming Disorder are severe, research shows that it is difficult to determine when one suffers from video Gaming Disorder as it displays similar characteristics to many other addiction disorders (Ayenigbara). Furthermore, it is difficult to determine if game-time is the leading factor in the development of Gaming Disorder because it is difficult to measure. For example, “a large representative sample of children in the United Kingdom found that those who played video games between one and three hours a day had similar levels of wellbeing as those who did not play games at all. Although those seeking treatment for internet addiction played for six to seven hours a day in one sample, a case series demonstrates that even gaming for fourteen hours a day is not necessarily indicative of addiction, e.g., if temporary and the gamer is able to cut back when competing demands arise” (Carras et al.). These varied

results show that it is difficult to determine whether or not game time can be defined as the primary attribute for the likelihood of one developing Gaming Disorder.

Additionally, research shows that problematic levels of play, such as those associated with Gaming Disorder, have been found to reflect other outside stressors in an individual's life; therefore, it is difficult to say that video gaming is responsible for any negative impact on an individual (Latnisky and Ueno). One example of an outside stressor that can influence the likelihood of one developing Gaming Disorder is parent-child relationship (Cuong et al.). A study showed that a parent's discipline style is likely to affect whether or not their child is more prone to developing Gaming Disorder. The study consisted of three different paper-based questionnaires: the first tested the child for possible indicators of internet gaming disorders, the second surveyed the parents and children on the parent-child relationship and parental supervision and discipline style, and the final survey accounted for the participants' socio-demographic and socioeconomic information (Cuong et al.). The study found that "the prevalence of Gaming Disorder was highest among those who received supervision with severe physical punishment, those supervised without discipline, and those with no parental supervision" (Cuong et al.). This finding shows that it is challenging to diagnose Gaming Disorder and understand what causes it because individual factors such as one's home life, can increase the likelihood of developing Gaming Disorder.

How Motivation for Playing and one's environment influence one's Gaming Experience

One's motivation for play and the types of games that they play also greatly impact the effects one will experience from gaming. The mental health effects that one will experience from video gaming depend on one's "online and offline social support" and one's "motivation for gameplay" (Halbrook et al.). For example, social gaming can have different effects on an

individual based on the nature of the game. “Social gaming involves playing a video game with others, and game types can be categorized as either cooperative or competitive. In cooperative games, two or more players engage in a video game on the same team with the same or similar goals, whereas in competitive games, two or more gamers play against each other in a competitive manner” (Halbrook et al.). It is shown that when an individual plays social cooperative games, “both for moderate periods of time and for social purposes, [they] had significantly lower levels of psychological symptoms, including depression, stress, and anxiety, than those who played for excessive periods of time or who played for achievement purposes [competitive games]. These negative psychological symptoms were further reduced if the player had both strong online and offline social support” (Halbrook et al.). This study demonstrates that one’s motivation for play can impact the symptoms one experiences from gaming. Additionally, this point emphasizes that one’s home life and other external factors significantly impact one’s relationship with gaming.

The Consequences of Restricting Video Games

China’s Video Game Restriction Policies

In response to the potential harmful effects of excessive gaming, some may suggest restricting video games as a solution to avoid them. However, as shown by the current policies in China, restricting video game use may have severe adverse effects on adolescents. “In 2019, the Chinese government imposed significant restrictions on minors’ online video gameplay out of concerns regarding gaming addiction. These new regulations limited underage gamers to 90 minutes of gaming on weekdays and three hours on weekends and holidays, with a complete ban on gaming between 10 pm and 8 am” (Carras et al.). In 2021, China increased the strictness of these regulations by changing the policy “to a limit of one hour of play only on Friday, Saturday

and Sunday, with the frequency and intensity of government inspections of online gaming companies increased to ensure compliance” (Carras et al.). The policy is enforced by requiring citizens to link online game accounts to a real-name registration system for online game accounts to monitor video game activity (Ceo).

Although these policies may seem like a potential way of preventing children from developing Gaming Disorder, they fail to “address the need to consider disordered gaming as a maladaptive solution to another problem” and “deny evidence for the many benefits the moderative gaming involvement can bring” (Carras et al.). Restricting video gaming may have severe adverse effects because they “fail to address the other contributing factors that may lead individuals to use gaming as a coping mechanism, which runs the risk of driving youth to other maladaptive coping methods such as substance use” (Carras et al.). Furthermore, these policies only focus on limiting one’s gaming time; however, as mentioned, it is difficult to determine whether or not game time influences the likelihood of one developing Gaming Disorder, and therefore, the policies should be altered to address the other risk factors of disordered gaming (Carras et al.). The current policies in China show that restricting video games is not a solution to concerns about video gaming and that in order to determine what causes Gaming Disorder, research must be done to determine what stressors and internal factors predispose one to developing it.

Conclusion

Although the media continues to associate video gaming with violence and repeatedly stereotypes gamers, research shows that video gaming does not negatively affect one’s overall well-being. Research indicates that there is no correlation between video games and the likelihood of an increase in aggression, and reveals that false statements in the media mostly fuel

this notion. Furthermore, the negative effects that are often attributed with gaming are often side-effects of outside stressors, and it is shown that it is difficult to determine if video game time can be labeled as the main contributing factor to the development of Gaming Disorder. Additionally, as seen in China, it is more harmful to restrict video gaming, as it can lead to the development of more harmful coping mechanisms. Overall, video gaming is shown to positively affect one's physical health, cognitive abilities, social skills, and overall well-being as long as game time is not excessive. The power of the media attempts to negatively stigmatize video gaming; however, research shows that video gaming can be used as a tool that can help us improve all aspects of our everyday life.

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Works Cited

- Ayenigbara, Io. "Gaming Disorder and Effects of Gaming on Health: An Overview." *Journal of Addiction Medicine and Therapeutic Science*, Oct. 2018, pp. 001–03. DOI.org (Crossref), <https://doi.org/10.17352/2455-3484.000025>.
- Besombes, Nicolas, and Pauline Maillot. "Body Involvement in Video Gaming as a Support for Physical and Cognitive Learning." *Games and Culture: A Journal of Interactive Media*, vol. 15, no. 5, July 2020, pp. 565–84. EBSCOhost, <https://doi-org.sacredheart.idm.oclc.org/10.1177/1555412018820426>.
- Bella, Timothy. "Politicians Suggest Video Games Are to Blame for the El Paso Shooting. It's an Old Claim That's Not Backed by Research." *Washington Post*. [www.washingtonpost.com, https://www.washingtonpost.com/nation/2019/08/05/kevin-mccarthy-dan-patrick-video-games-el-paso-shooting/](https://www.washingtonpost.com/nation/2019/08/05/kevin-mccarthy-dan-patrick-video-games-el-paso-shooting/). Accessed 27 Mar. 2022.
- Carras, Michelle Colder, et al. "Draconian policy measures are unlikely to prevent disordered gaming." *Journal of Behavioral Addictions*, vol. 10, no. 4, Dec. 2021, pp. 849+. Gale Health and Wellness, link.gale.com/apps/doc/A692642657/HWRC?u=24034&sid=ebsco&xid=91b62f3a. Accessed 12 Mar. 2022.
- Ce0, Paul. "China Introduces Video Game Restrictions for Minors." *UWIRE Text*, 7 Nov. 2019, p. 1. Gale Academic OneFile, link.gale.com/apps/doc/A605066518/AONE?u=24034&sid=ebsco&xid=7e5376dd. Accessed 25 Feb. 2022.
- Cuong, Vu Manh, et al. "Associations between Gaming Disorder, Parent-Child Relationship, Parental Supervision, and Discipline Styles: Findings from a School-Based Survey

during the COVID-19 Pandemic in Vietnam.” *Journal of Behavioral Addictions*, vol. 10, no. 3, Sept. 2021, p. 722. EBSCOhost, <https://doi-org.sacredheart.idm.oclc.org/10.1556/2006.2021.00064>.

Halbrook, Yemaya J., et al. “When and How Video Games Can Be Good: A Review of the Positive Effects of Video Games on Well-Being.” *Perspectives on Psychological Science*, vol. 14, no. 6, Nov. 2019, pp. 1096–104. EBSCOhost, <https://doi-org.sacredheart.idm.oclc.org/10.1177/1745691619863807>.

Jacob. “How Many Video Games Exist?” *Gaming Shift*, <https://gamingshift.com/how-many-video-games-exist/>. Accessed 9 Apr. 2022.

Latinsky, Andrew, and Koji Ueno. “Leveling Up? Video Game Play in Adolescence and the Transition into Adulthood.” *Sociological Quarterly*, vol. 62, no. 1, Winter 2021, pp. 36–59. EBSCOhost, <https://doi-org.sacredheart.idm.oclc.org/10.1080/00380253.2019.1711265>.

Nove, Sarah. *Politics and Video Games Are More Linked than You Might Think – The Retriever*. <https://retriever.umbc.edu/2020/11/politics-and-video-games-are-more-linked-than-you-might-think/>. Accessed 2 May 2022.

Przybylski, Andrew K., and Netta Weinstein. “Violent Video Game Engagement Is Not Associated with Adolescents’ Aggressive Behavior: Evidence from a Registered Report.” *Royal Society Open Science*, vol. 6, no. 2, Feb. 2019, p. 171474. DOI.org (Crossref), <https://doi.org/10.1098/rsos.171474>.

Timm, Jane. “Fact Check: Trump Suggests Video Games to Blame for Mass Shootings.” *NBC News*, <https://www.nbcnews.com/politics/donald-trump/fact-check-trump-suggests-video-games-blame-mass-shootings-n1039411>. Accessed 27 Mar. 2022.

“Violent Video Games and Young People - Harvard Health Publishing.” Harvard Health, 1 Oct. 2010, https://www.health.harvard.edu/newsletter_article/violent-video-games-and-young-people.