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## RESEARCH ARTICLE

## PHYSICAL AND PSYCHOLOGICAL EFFECTS OF VIDEO GAME ADDICTION: AN OVERVIEW.

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**Abstract**

The unprecedented growth of video game use among adults and children around the globe has prompted questions about its effects on the physical and psychological domain from parents, teachers, and researchers. The purpose of this article is to shed some light on this pressing issue. Video game addiction may lead to a broad spectrum of social, psychological, and physical consequences. Many studies exploring this area have been conducted in the past two decades. The mechanisms underlying video game addiction carry a great resemblance to substance addiction. Anxiety disorders, attention deficit disorder, and affective disorders may coexist with video game addiction. Video game addiction is linked to impairment in social skills and poor performance in school. Violence and aggression are also associated with video game addiction. Several physical issues may result from the repetitive use of video games, including joint pain, tendon rupture, and even death. Policymakers and public figures have yet to address these issues and introduce a strategy to tackle this problem.

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**Introduction & Background:-**

Video games are becoming one of the dominant forms of electronic entertainment for both adults and children around the globe [1]. In the past, video games were recreational tools that only some people used; now, they are progressively occupying more time and becoming more addictive, thereby negatively influencing the daily activities of many people worldwide [1]. The claim that video games are potentially addictive is only based on observations [2]. Video game addiction has not been proposed to be included in the fifth version of the Diagnostic and Statistical Manual of Mental Disorders [3]. Researchers agree on the similarity of the neurobiological mechanisms of video game addiction and substance use addiction [4,5]. Young argued that online game addiction among teenagers and young adults has become increasingly prevalent [6]. Many areas in a person's life, such as schoolwork, employment, and family and social relationships, can be affected by online video game addiction [6]. Countries around the world are starting to pay close attention to these statistics. On many college campuses, support groups have been formed to provide help for those who may be addicted to video gaming. Hospitals, clinics, and addiction rehabilitation centers are admitting cases of Internet-related addictions [6]. Despite all of the potential negative consequences, an addict's obsession may become exceedingly powerful, prompting continued game playing [7]. It is important to note that recently, online gaming appears to have become more problematic for individuals than offline gaming [8]. In China, authorities have taken action by shutting down Internet cafés and establishing laws to control the number of hours adolescents are allowed to play online video games.

**Review:-****Definitions:-**

A video game can be defined as "an electronic game played by means of images on a video screen which often emphasize fast action" [9]. There is no consensus on a single serviceable definition of video game addiction [10]. Video games include console, computer, arcade, and cell phone games. 'Video game' as a term does not differentiate between Internet (online) and console (offline) video games. Console video games may include

Nintendo®, PlayStation®, Xbox®, and others. Internet video games refer to online gaming when many people of different ages, ethnicities, religions, and countries play the same game at the same time [1]. Video game addiction is excessive use of video games that interferes with daily life. Users may isolate themselves from their community and all types of personal or social contact by focusing almost entirely on the achievements in the game rather than life events [11]. Griffiths defined addictive behavior as any behavior that meets the following six criteria: salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse [12]. There are other markers of dependence and addiction on video games such as irritability if unable to play, low academic grades, and increased aggressiveness, among others [13].

It has been argued that video game addiction should be characterized by the extent to which excessive gaming negatively affects the gamers' lives rather than the amount of time spent playing. Regardless of the time spent playing video games, a player cannot be described as a video game addict unless there are clear negative consequences in that player's life and daily activities [14].

#### **Negative Effects of Video Games in General:-**

Many studies revealed that depression, anxiety, and attention deficit hyperactivity disorder may co-occur with video game addiction [4]. Loftus et al. found that two-thirds of (arcade) video game players complained of blisters or numbness of the fingers, hands, and/or elbows as a result of their playing, which could lead us to believe that similar injuries could also result from repetitive motions playing on mobile devices, computers or at-home game consoles. Regarding school performance, some studies by Anderson, Dill, and others indicate that video games have a negative impact on academic achievement [15–17]. A study by Gentile et al. indicates that adolescents who are video gamers are more likely to have arguments with teachers [16].

#### **Video Game Addiction and Aggression:-**

As Anderson writes “Aggression is behavior intended to harm another individual who is motivated to avoid that harm. It is not an affect, emotion, or aggressive thought, plan, or wish” [15]. Despite containing a variety of content such as educational aspects and puzzles, many video games contain some violent content [15,16,17]. Violence attributable to video games first emerged with school shootings by players of violent video games at West Paducah, Kentucky (December 1997). Similar incidents began to surface in other areas of the world [51]. A meta-analysis by Anderson and Bushman found that violent video games were associated with five different types of outcome variables, including aggressive cognition, aggressive behavior, aggressive emotion, Anti-social behavior, and physiological arousal [15]. They also found five consistent effects of violent video games on each of these five variables. Kuss et. al. suggested that exposure to violent video games aggravates aggressive thoughts, feelings, and behaviors, increasing physiological arousal, and decreasing pro-social behaviors [20]. Many studies recently imply that playing violent video games leads to short-term and long-term increases in aggression-related outcomes for game players [16,30]. Gentile et al. revealed that exposure to violent video game content and the amount of video game play were both positively correlated with the extent of adolescents' hostility [16]. Lynch noticed that among adolescents who play video games, the physiological effects of playing violent video games might be greater for those children who already have more aggressive tendencies [21]. Another factor that could help modify aggressive behaviors may be parental monitoring and limiting, which has been proposed by some researchers [22,23]. Such studies suggested that parental limitations can have beneficial effects, limiting some of the unwanted effects of violent video games. Gentile et al. proposed that parental limits were negatively correlated with trait hostility and positively associated with school performance [16].

#### **Video Game Addiction and Social Skills:-**

The studies discussing the impact of video game addiction on social life and skills are limited and inconclusive. The effect of computer games on the development of social skills was examined in some studies [24]. Some recent studies in online gaming have emphasized the positive social effects of playing multi-player online video games [25–27]. Griffiths suggested that high-frequency computer game players would have more social inadequacy, whereas those who play less have less social inadequacy [28]. There are similarities between video game addiction and Internet addiction, as both of them might be considered under the category of behavioral addictions; thus, Internet addiction negatively influences social life, despite users going online for social interaction [28, 29].

#### **Video Game Addiction and School Performance:-**

Despite recent negative attention, a few studies have shown no significant association between the number of video games played and school performance, e.g., the study done by M. Skoric et al., which showed no significant

association between the amount of time spent playing video games and engagement tendencies and school performance. However, the same study found that children with greater levels of video gaming addictive tendencies were significantly more likely to have lower school performance [1]. On the contrary, many other studies found an inverse association between scholastic performance and the amount of video game play [30–33]. Overall, most studies support the idea that video games decrease academic performance [35]. Other than affecting school performance because of their content, video game play might also affect school performance negatively by displacing the time that the person should spend on educational activities such as reading and homework. Huston explained this as the “displacement hypothesis” [36]. Lo, Fang, and Wand found that in Taiwan, many teenagers spend more hours in Internet cafés than participating in school-related activities [37].

### **Video Game Addiction and Obesity:-**

The significant rise in obesity rates, especially among adolescents, presents multiple problems for personal health and the overall community given the association between obesity and diseases such as heart disease and diabetes mellitus [38]. There are a limited number of studies about the physical effects of video game addiction. There are many studies emphasizing the association between TV viewing and obesity that might be applied to video game addiction as well; physical effects of both addictions are usually associated with the resulting sedentary lifestyle. The World Health Organization (WHO) has claimed that video games are the leading cause of childhood obesity [39]. Research studies and mass media consider video games to be an important cause of obesity in adolescents because playing video games encourages sedentary behavior [40,41]. Recent studies also link addictive gaming with increased caloric intake along with a lack of physical activity [42]. Other findings show that video game use might not have a major effect on childhood obesity to the extent suggested by previous studies [43]. Interestingly, Wack et al. stated that college-aged gamers who played over 15 hours per week were not likely to have higher BMI than others who played less than that or even those who do not play at all [44].

### **Other Physical Effects:-**

Immersion in video gaming may lead players to choose games over food; thus, leading to a state of malnutrition. Excitability from video games can result in high heart rate and elevated blood pressure [45]. Many studies reported several adverse effects of video game addiction including elbow pain, neck pain, wrist pain, tendon rupture, and peripheral neuropathy [46–49]. Video game addiction can even lead to mortalities in the form of suicides or motor vehicle accidents due to cyber-bullying and distractibility, respectively [50].

### **Conclusion**

Video game addiction is a controversial topic. Although video games have been embraced by many young individuals, the adverse effects of video game play deserve further attention. We encourage public figures and policymakers to formulate strategies to tackle this issue.

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