

An analysis of Gaming Disorder's Cause, Impact and Therapy

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Abstract. With the development of the Internet, online games, as one of the most common and popular entertainment, have become something that most people become addicted to, then a mental illness called gaming disorder appears. In this paper, the authors summarize the causes, impacts, and therapies of gaming disorder by reading and analyzing relevant materials. The causes of gaming disorder include game design, psychological aspect, and social aspect. Gaming disorder can have negative impacts on people's health, including physical health and mental health. Although gaming disorder can have many negative effects on people's health and life, fortunately, it can be treated with therapies including Self-Regulation, Cognitive Behavioral Therapy (CBT), and Family-based Interventions.

Keywords: Gaming disorder; Causes; Health; Therapies.

1. Introduction

As a popular entertainment, online games are the main way for most people to spend their time. The behavior of using online games for a long time leads to gaming disorder. Gaming disorder has been recognized as a new mental disorder by the World Health Organization and included in the latest edition of the International Classification of Diseases [1]. According to the International Classification of Diseases published by the World Health Organization, there are three main criteria for determining gaming addiction: 1) Unable to control the beginning, end, and duration of the gaming behavior. 2) A decrease in other activities of daily life due to a higher level of addiction to games. 3) Cannot stop playing games even though the patients are aware of the negative effects on their health and interpersonal relationship [1].

The design of online games, people's psychological pain or social difficulties, and the social promotion of online games are the causes of gaming disorder. The health and daily life of people with gaming disorders are negatively affected. Prolonged gaming behavior can lead to poor eyesight, disturbed sleep rhythms, reduced sleep duration, physical weakness, emotional instability, mental retardation and other health problems. Moreover, scientific studies have shown that long-term addiction to online games will cause structural changes in part of the brain, resulting in patients with decreased self-control, cognitive function impairment, and this can affect people's lifestyle [1, 2]. People with gaming disorder often experience personality changes, such as cowardice, low self-esteem, guilt, irritability, and anxiety. If a person with gaming disorder suddenly stops gaming behavior, the desire and impulse to play online games will increase, which can lead to the appearance of some withdrawal symptoms. As a result of prolonged gaming addiction, people with gaming disorder have reduced social activities on a daily basis, which can lead to damaged relationships with friends and family. In addition, people with gaming disorder may lose interest in daily activities such as study and work, so their daily life will be greatly affected. But, fortunately, gaming disorder can be treated. It is concluded that the treatments of gaming disorder should be carried out through three aspects: self, hospital and family.

During the recent epidemic, many people have to stay at home often, so they have more time to play online games, which has resulted in an increasing number of people with gaming disorders. Therefore, the purpose of this paper is to provide a comprehensive summary of gaming disorder by reviewing, analyzing and summarizing relevant data on Google Scholar. This paper discusses the

possible causes of game addiction from the aspects of game design, psychological factors and social factors, discusses the impacts of game disorder on health from both physical and psychological aspects, and gives the treatment methods of game disorder. The authors hope that people with gaming disorders can be treated and have a healthy body and lifestyle.

2. The causes of gaming disorder

2.1 Game design

When game designers create a game, they take into account the feel of the game experience and the emotions of the players. Match game designers, for example, know that when people eliminate things, they derive pleasure from the visual senses. It's like the stress is gone. Some games use a lot of huge numbers, like money and prices. These huge numbers reveal a lot about people's satisfaction with money. Also, a good game usually has great character models, costumes and great skill effects. They can entice people to buy new clothes for their characters and keep playing the game. Sometimes, they design surprises for players, such as extra prizes and special tools, so that players are so happy that they continue to play. Video games these days have promotional rewards, which are instant rewards that encourage kids to play harder and harder. By using big data to analyze people's behavior and preferences, game developers can design games that better suit players' preferences and make users more addictive.

2.2 Psychological aspect

They are always under pressure in study or work. They need to release the pressure, so they play the game, after a few days, if they can't control themselves, they are always addicted to it [3]. Some people like the look of the character and the cool skill effects. When a player wins, the addictive circuitry in the brain is abnormally activated, creating pride and the recognition of self-worth that comes from winning. So, players prefer to live in a virtual world [3]. Nowadays, network communication technology is developing. Users can meet their gaming friends on WeChat and QQ. If they don't have friends in their daily life, they can make friends online and chat with their friends. This feeling of satisfaction is produced by dopamine. Dopamine secretion can be called human reward mechanism or reward pathway [2]. When a person's own desires, such as the pursuit of social status and sexual satisfaction, people will secrete dopamine in response, giving people a sense of mental excitement and pleasure. The dopamine D2 receptor is one of the neural mechanisms that scientists have discovered over the past few years for feeling satisfied. It can be said that dopamine D2 is a more direct factor for people to achieve happiness and satisfaction [2].

2.3 Social aspect

Game companies want to make more money, so they have to advertise their games. They advertise and make short videos on Internet platforms. They lure people in with pretty and cute characters, virtual data, and lots of lucky draws. They use a lot of game gifts to make money. But they are even considered worth paying for. Because they've already paid for the game, they don't want to give it up. There are many games online. Although they give up one game, they always find another to play.

In 2019, the epidemic broke out. Many students and workers had to stay at home. They use computers to study or work. It means that if they don't control themselves, they have a lot of time to play online games.

3. Impacts of gaming disorder

Gaming disorder will have some negative impacts on people's health. The effects of gaming disorder on people's physical health include sleeping problems, obesity, and physical pain. In addition, gaming disorder can affect people's mental health, which is associated with some psychological problems. It can be speculated that people spend too much time playing games and do not have time

for other daily activities, which is the main reason for the impacts that gaming disorder has on people's health.

3.1 Physical health

3.1.1 Sleep problems

Excessive use of online games will have some negative impacts on people's sleep. It can lead to some sleep problems such as insufficient sleep time and decreased sleep quality. A study of the association between online game use and sleep among college students in Hong Kong found that online game addiction had a negative impact on sleep [5]. Questionnaires such as Internet Gaming Disorder Scale-Short Form 9(IGDS-SF9), Bergen Social Media Addiction Scale (BSMAS) and Pittsburgh Sleep Quality Index (PSQI) were used to study 15 participants over a period of 3 months [5]. The experimental results showed that Internet gaming disorder was negatively correlated with sleep [5]. It can be speculated that the negative effect of online gaming disorder on sleep may be due to the fact that people spend a lot of time in online games, and do not have enough time to sleep, which could lead to the decline of sleep quality.

3.1.2 Obesity

Gaming addiction will have effects on obesity. In the study of the effects of Internet addiction on obesity among middle school students in Xiangtan City, China, researchers investigated the status of obesity and Internet addiction among 1150 middle school students in Xiangtan city [6]. The experimental results showed that the detection rate of obesity in students with Internet addiction was much higher than that in students without Internet addiction [6]. So it can be found that Internet addiction can have effects on obesity [6]. There are three possible reasons for the effect of Internet addiction on obesity. First, game addicts spend most of their time on games, so they do not have time to exercise. Then calories cannot be burned and this will lead to obesity. Second, game addicts often have no time to have meals because of addiction to playing games. In this case, they will have some snacks and drinks which could cause obesity. Third, addicts may suffer from psychological problems caused by excessive use of games, and this may lead to problems like overeating which could cause obesity.

3.1.3 Pain

Excessive use of online games for a long time can cause pain in some parts of the body. In the study of the effects of online game use on the musculoskeletal system among secondary school children in Kayseri, researchers used a computer game addiction scale for children to learn about game addiction in 1000 middle-school students, and also evaluated the students for pain [7]. The experimental results found that online game addiction can lead to pain in the neck, head, wrist, and other parts of the body [7]. The physical pain caused by online game addiction may be caused by holding a certain position, like sitting, for a long time, or overuse of certain parts of the body, such as fingers and wrists, for long periods of time.

3.2 Mental health

Gaming addiction can have impacts on mental health and have a correlation with psychological problems such as anxiety, depression, and mental stress. In the study of the correlation between online game addiction and mental health problems among college students in Hong Kong, the experimental results found that the severity of video game addiction is positively correlated with depression, anxiety, stress and psychological distress [8]. It can be speculated that the influence of game addiction on mental health may be due to the fact that game addicts spend most of their time on online games, and they do not communicate with others, also the physical discomfort and emotional problems caused by the long-term excessive use of games will affect the psychological status of addicts.

4. Therapy

The emergence of game addiction psychosis needs to consider psychological treatment, drug treatment, family therapy, etc. If you are addicted to games, you should first consider the personal characteristics, such as introversion, lack of friends, poor self-control and so on. When the symptoms of Internet addiction are mild, they can be alleviated by self-adjustment, improving self-control, shifting attention, and managing time properly, usually without special intervention. However, if the symptoms of Internet addiction are serious, affecting normal work and life, and cannot be alleviated for a long time, it is necessary to choose the following treatment methods for intervention according to the specific circumstances of the individual. The main treatment options for video game addiction (Internet gaming disorder) are self-restraint, family restraint, and related psychotherapy. Psychotherapy is the term for a variety of therapeutic techniques designed to help you identify and change disturbing emotions, thoughts, and behaviors.

4.1 Self-Regulation

There are a number of ways to overcome video game addiction, but it will undoubtedly take effort and discipline [9]. One of the most effective methods is to set strict limits on how much time you can spend playing games. This could mean setting a timer schedule and sticking to it. It is suggested that addicts take other activities such as spending time with friends and family, taking up a new hobby, or getting involved in extracurricular activities instead of playing games. First, set a time limit for game playing and stick to it. Health experts recommend that teenagers and school-age children spend no more than two hours a day in front of screens and that it is equally important for adults to limit sedentary time [10]. People are suggested to keep cell phones and other gadgets out of the bedroom, as people are susceptible to having a phone in sight [10]. Some apps can help restrict teenagers from playing certain games. Some apps will lock the device completely for a set amount of time to push the user to do other activities every day, including exercise. This will reduce the health risks of sitting and playing for long periods. From the perspective of individual psychology, game addiction patients themselves must raise awareness, especially to realize their addiction to the Internet has a lot of harm [10].

4.2 Cognitive Behavioral Therapy (CBT)

Another therapy is psychological counseling for gaming disorder--Cognitive Behavioral Therapy (CBT) [11]. Cognitive behavior therapy belongs to self-therapy [11]. The purpose of therapy includes external manifestations, such as behavior, emotion and other external manifestations, and for patients' thinking problems, to find out mistakes, and then self-correction. Cognitive behavioral therapy can treat a variety of psychological disorders, as well as some neurological disorders such as depression, anxiety, sexual dysfunction, drug-induced dependent disorders, fear, and even psychosis [11]. The patient is recommended to maintain emotional stability in daily life. Experts emphasize that it is necessary to clarify the cognitive components and psychological mechanisms of Internet addiction patients to expose them to the most sensitive stimuli, challenge their maladaptive cognition, and gradually train them to think correctly and act on the Internet [11]. For patients who escape from realistic interpersonal communication due to self-seclusion, fear of communication, and other factors, group psychological counseling techniques and realistic interpersonal communication training can be used in the process of using cognitive behavioral therapy. In the process of group counseling, teenagers will get support from the same confused friends, psychologically reduce their sense of special, and gain a sense of security and belonging; At the same time, interspersed with face-to-face communication skills training, in reality, exposed their own misunderstandings and shortcomings in interpersonal communication, so that young patients can gradually overcome their interpersonal communication barriers in the process of group communication, group discussion and group training.

4.3 Family-based interventions

Often adolescents and children who addict to playing games have close family relationships. On one hand, parents should pay more attention to their children. Children's life is very simple, they will be interested in games. One of the possible reasons is that the parents ignore the children. Parents are advised to communicate with their children often and talk with them about funny things happening in school, which can strengthen the parent-child relationship. On the other hand, parents can monitor how long their children play games through relevant apps, and set up which games are only allowed for their children. But more important for the parents is to guide their children calmly.

5. Conclusion

This paper mainly discusses the causes, impacts and therapies of gaming disorder. Regarding causes, three main causes have been identified: 1) Game design -- When designing games, game developers make use of some skills and players' psychology to make players attracted and immersed in the game. 2) Psychological aspects -- The pain caused by stress in life can be alleviated in games. People with social difficulties can avoid social interaction and succeed in games. These psychological factors can make people more likely to stay in the game, leading to gaming disorder. 3) Social aspects -- Social factors such as massive game promotion by game companies and the outbreak of COVID-19 have exacerbated the prevalence of gaming addiction and gaming disorders. This study explored that gaming disorders have a negative impact on people's physical health-mainly including sleep problems, such as reduced sleep time and sleep quality; Obesity-gaming disorder is associated with an increased risk of obesity; Pain-gaming disorder can cause pain in certain parts of the body. Gaming disorder also has a negative impact on people's mental health and some mental illnesses. Three types of treatment were discussed: 1) self-regulation, including identifying problems and limiting the amount of playing-game time; 2) cognitive behavioral therapy; 3) family-based intervention. A research gap is found that there are not many studies focusing on the causal relationship between gaming time and gaming disorder. It is not clear whether gaming disorder leads to long gaming time, or long gaming time leads to gaming disorder. However, there are some limitations of this study which are caused by the difficulty of getting access to all the reading materials.

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