



A Case Report: Conduct Disorder Due to Internet Gaming Disorder

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Abstract. Background: Internet gaming disorder (IGD) is continuous and repetitive activities of playing games, such as online multiplayer games. Consequently, these activities could cause illness and difficulties among the players that may last more than 12 months. Meanwhile, conduct disorder (CD) is a common mental disorder. This disorder is a massive disruption as the appearance commonly occurs in adolescence or teenagers, characterized by antisocial behaviours and continuous aggressive and non-aggressive activities. Moreover, during the pandemic of COVID-19, the occurrence of IGD increased, and people suffering from IGD may have a higher risk of developing other psychiatric disorders, including CD.

Case Report: A 14-year-old boy was suspected to experience IGD during the COVID-19 pandemic, and his behaviour developed into mental disorders. He has been diagnosed to have conduct disorder.

Conclusion: Conduct disorder could be caused by the activities of internet gaming. The risks of developing this disorder could also be found from many factors; thus, parents and schools significantly contribute to preventing this disorder. One of the psychiatric guidelines is applying cognitive behaviour therapy (CBT), conducted by both families and schools.

Keywords: internet gaming disorder · conduct disorder · the effect of the internet

1 Introduction

The COVID-19 pandemic has been shifting almost the entire life aspects of humans, and whole parts of society have experienced the impacts. One of the policies applied in many countries is to alter face-to-face learning into long-distance learning via the internet online [1]. For example, in Indonesia, the Ministry of Education and Culture issued Circular Letter No. 4/2020 about the guidelines for conducting learning during the COVID-19 pandemic. The letter ordered all educational institutions to run the class from home with the involvement of teachers and students via online courses [2]. This situation allows adolescents to freely use electronic devices, such as smartphones and laptops, as learning media and use the devices for online gaming, internet shopping, watching movies, and chatting [1].

This situation also has increased the addiction level, especially internet gaming disorder (IGD). The IGD is an online gaming activity that has been played repeatedly and continuously. Commonly, these activities are played in multiplayer which may result in disturbances and difficulties for the players for more than 12 months. Therefore, the IGD is categorized as DSM-V with conditions for further study [1, 3].

In a relatively long time, IGD could contribute significantly to the cognitive and behavioural features of the players. These may include progressively losing control of the games, tolerance in playing the games, and withdrawing behaviours. Since the players are not allowed to play the games, they would display agitation and anger. Any mandatory activities such as schools, work, and families are commonly avoided [3].

Conduct disorder (CD) is a mental disorder that occurs in adolescence. This behaviour is exceptionally unacceptable due to its antisocial behaviours, such as constantly breaking the rules of aggressive and non-aggressive acts [3, 4].

2 Case Report

A 14-year-old boy was admitted to the hospital in the accompany of his parents. This male student is a Gayo ethnic, and his parents arrived with a complaint of showing misbehaviour. He has been reported as physically striking an owner of the internet café as the owner asked him to stop playing games and leave the café. In addition, he often expresses harsh words and bangs his friends' heads while playing online games. Another physical abuse is shown by hitting the computer's table whenever the game he was playing did not go accordingly. He also expressed irritability and annoyance every time he was asked to stop playing online games.

The beginning of the symptoms was observed in the early COVID-19 pandemic in 2020, in which he took online long-distance learning from the school. As his parents do not own a smartphone, he often visits nearby internet café. During visiting the café, he often arrives late, and in the past year, he has been frequently staying in the café. As a result, he assertively demands some money from his family, and aggressively takes his friends' money by threatening them. Moreover, no drug use was found.

The parents are coffee growers. They spend a lot of time at their coffee plantation and they stay for weeks during harvesting days. Consequently, their 14-year-old son often interacts with their daughter at home while the son-parent relationship has worsened since the son often plays online games at the café.

During the psychiatric examination, the patient suffered from a sleeping disorder and he has been showing anger disorder for the last two years. He also complained of anxiety if he is not allowed to play games. The reason behind his addiction is to accomplish missions in online games. He plays online games for 10–12 h a day, and the games that he plays are Grand Theft Auto-V (GTA-V), Valiant, Player Unknown Battle Ground (PUBG), and DOTA. According to his explanation, the patient seems to experience entertainment and satisfaction during playing the games as there are activities that cannot be obtained in the real life. In the past year, he has shown his intention to stop playing games, however; anxiety always comes.

During the interview, the patient showed carefulness and only talked when asked. He also displayed dysphoric mood, appropriate affection, and no thinking disorders were observed, such as delayed and abstract thinking, perception and orientation, memory loss, and judgment. However, the ability to concentrate has been disturbed, and vital levels showed normal as well as physical examination. Psychiatric assessment via Internet Gaming Disorder 9-Short Form (IGD9-SF) showed a score of 42, and he has been confirmed to have behavioural disorders of CD in accordance with DSM-V criteria.

The treatment plan for this patient is Cognitive behavioural therapy (CBT), family therapy, and school intervention.

3 Discussion

A study conducted by Huixi Dong in China in 2020, has suggested that the excessive use of the internet among children and adolescence during the COVID-19 pandemic occurred [1]. In another study, Taiki Oka et al. in Japan showed the prevalence of IGD during the pandemic increased from 4.1% to 8.6%, in which the percentage of users less than 30 years of age increased by 1–2.5% before the pandemic [5].

Children and adolescents that have been addicted to internet use have been reported to be more vulnerable to suffering from any type of mental disorder. Proven Sachan et al. in 2020 reported various types of mental disorders due to IGD, including oppositional defiant disorder (ODD) for 46.66%, dissociative disorders for 24.44%, attention deficit hyperactivity disorder (ADHD) for 17.77% and depression for 11.11% [6]. In many cases, the CD is comorbid to ODD, where one study has suggested that ODD was a more potent risk factor for developing CD in boys, and ODD might have been considered to be a more substantial risk factor for developing CD than any other common disorders [3, 7]. Any misbehaving actions have an onset in childhood or adolescence and are usually more common in boys than girls [8].

The previous case could be assessed as CD based on the DSM-V diagnostic criteria [3]. The criteria are:

- A. A repetitive and persistent pattern of behaviour in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of at least three of the following 15 criteria in the past 12 months from any of the categories below, with at least one criterion present in the past six months:
Aggression against People and Animals
 1. Often bullies, threatens or intimidates others.
 2. Often initiates physical fights.
 3. Has used a weapon that can cause serious bodily harm to others (e.g., a bat, brick, broken bottle, knife, gun).
 4. Has been physically cruel to people.
 5. Has been physically cruel to animals.
 6. Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).
 7. Has forced someone into sexual activity. Destruction of Property

8. Has deliberately engaged in fire setting to cause serious damage.
9. Has deliberately destroyed others' property (other than by fire setting).

Deceitfulness or Theft

10. Has broken into someone else's house, building, or car.
11. Often lies to obtain goods or favours or to avoid obligations (i.e., "cons" others).
12. Has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking: forgery).

Serious Violations of Rules

13. Often stays out at night despite parental prohibitions, beginning before the age of 13.
 14. Has run away from home overnight at least twice while living in the parental or parental surrogate home, or once without returning for a lengthy period.
 15. It is often truant from school, beginning before age 13 years.
- B. The disturbance in behaviour causes clinically significant impairment in social, academic, or occupational functioning.
- C. If the individual is age 18 years or older, criteria are not met for antisocial personality disorder.

In our case, various factors may affect the patient in developing CDs, including biological factors [8, 9].

What happens in people with addiction are changes in brain networks that involve reward processing, executive function, salience attribution, and habit formation. Moreover, biochemical changes within the neurochemical pathway could be observed via the changes of dopamine, serotonin, opioid, and other neurotransmitters [9]. Subsequently, when someone experiences an unexpected event, such as an unusual reward or unpleasant event, dopamine is released in a higher number in rapid ways. This condition would activate the D1 receptor, and if the brain necessarily does it to accomplish the full reward effects [10].

Meanwhile, three conceptual frameworks for inpatients diagnosed with CD are connected. The first is the punishment processing disorders, which impair the ability of the patient to determine the relationship between inappropriate behaviour and the punishment to be received. Next is reward processing, which alters the dopamine function into hyposensitivity to reward. The last is an impaired cognitive function, such as executive function, that varies in terms of motivational factors [11].

Based on psychological factors, Daniel F. Connor has stated that many findings showed a relationship between poor parenting practices and behavioural disorders among children. These also include parental involvement during the growth and development of the children, inadequate monitoring in daily activities, understanding in knowing the children's friends, coercive family situations, and inconsistent and harsh discipline practises [8].

On the other hand, the risk factors appear to be happening separately. Nevertheless, these factors are interactive and directly given feedback, and the interactions are often multiplied and chronic to the children's life [8]. Non-pharmacology management has been introduced as the primary treatment for managing CD. The purpose of intervention is to control temperamental behaviours, in the interpersonal relationship among families and improve the efficiency of parents in dealing with their children's behavioural problems. In school-aged children, the main objectives of intervention are the children, families, and schools.

4 Conclusion

In this case, conduct disorder was confirmed caused by internet gaming disorder. Another risk factors that support the development of behavioural disorders are son- parent relationship. The role of parents and schools is essential for the management of this case, thus; the fundamental therapies in this case are Cognitive Behaviour Therapy (CBT), Family Therapy and School Interventions.

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