

Gaming Disorder 101: How to distinguish Passion from Problem?

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Speaker Information

Gaming Disorder 101

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Disclosure Information (Required)

- ◆ Presenter 1: Emily Brunner, MD DFASAM
 - ◆ Medical Director of Gateway Detox
 - ◆ Training and consultation for Hazelden Betty Ford
 - ◆ No commercial disclosures

- ◆ Presenter 2: Cam Adair
 - ◆ Founder, Game Quitters
 - ◆ Director of Research & Development, INTENTA
 - ◆ Advisor, Kindbridge

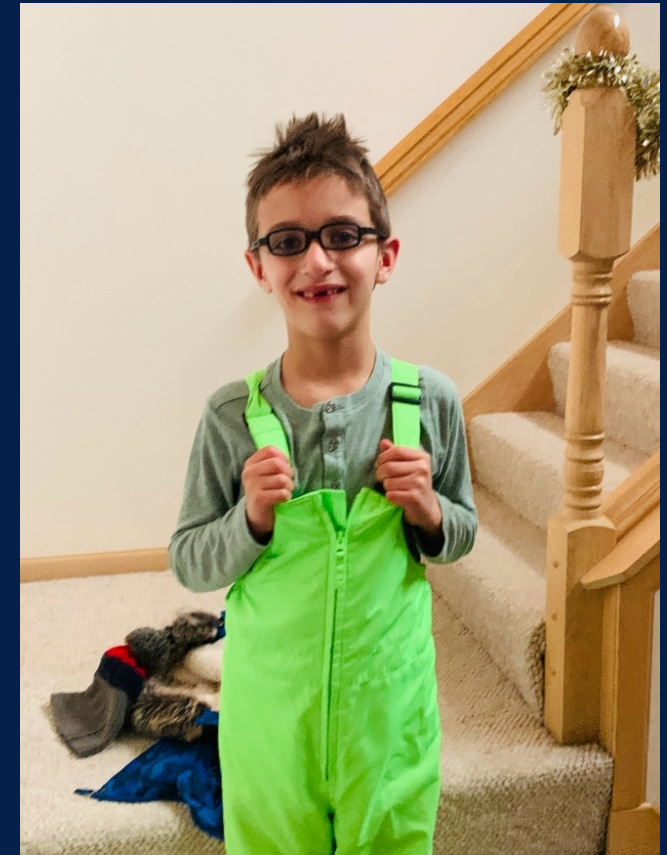
Learning Objectives

- ◆ Define five risk factors for gaming disorder
- ◆ Identify at-risk gamers with validated screening tools
- ◆ Apply harm reduction and treatment strategies for problematic gaming

This is not a Moral Panic

- ◆ In the 1700s, people worried about fiction novels corrupting women and
 - ◆ *“Novels have been long and frequently regarded not as being merely useless to society, but even as pernicious, from the very indifferent morality, and ridiculous way of thinking, which they almost generally inculcate.”*
 - ◆ Letter from 1789
- ◆ In the 1950s, there was an outcry over comic books, which resulted in a Senate hearing as well as public burnings

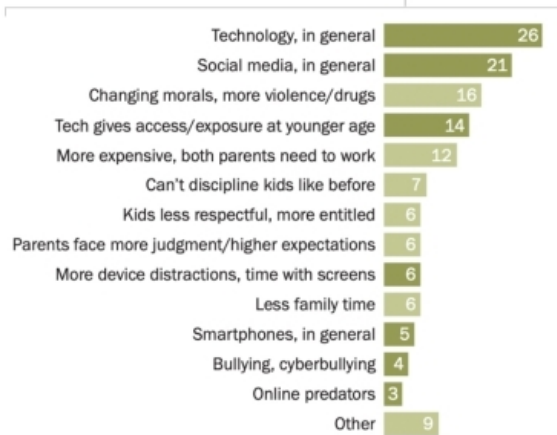
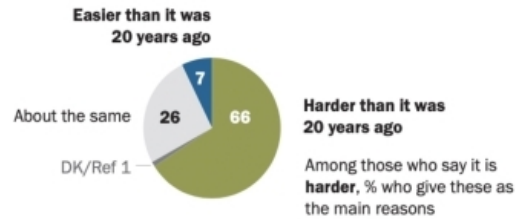
My personal interest in this topic



A majority of parents today say parenting is harder today than two decades ago, with many citing technology as a reason why

A majority of parents today say parenting is harder today than two decades ago, with many citing technology as a reason why

% of U.S. parents who say that for most parents, parenting is ...



Note: Based on parents who have at least one child under the age of 18 but may also have an adult child or children. Those who did not give an answer are not shown. Verbatim responses have been coded into categories and figures may add up to more than 100% because multiple responses were allowed.

Source: Survey of U.S. adults conducted March 2-15, 2020.

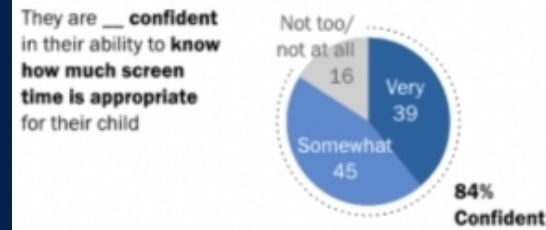
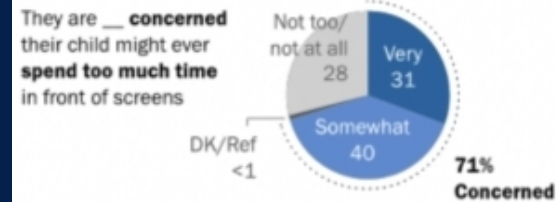
"Parenting Children in the Age of Screens"

PEW RESEARCH CENTER

Pew Research Study

A majority of parents are concerned that their child might ever spend too much time on screens and have reached out to doctors for advice about this

% of U.S. parents of a child age 11 or younger who say ...



*Based on parents of a child age 5 to 11.

**Based on internet users.

***Based on social media users.

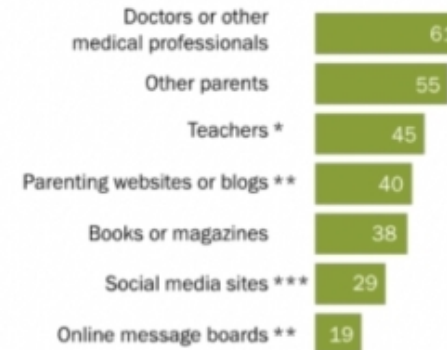
Note: If parent has multiple children, they were asked to focus on one child when answering this question. Those who did not give an answer are not shown.

Source: Survey of U.S. adults conducted March 2-15, 2020.

"Parenting Children in the Age of Screens"

PEW RESEARCH CENTER

They ever get parenting advice or information about screen time from ...



Majority of parents worry about their children spending too much time on screens, and 61% look to doctors or med Professionals to Provide advice

- ◆ 66% say parenting is harder than it was 20 years ago
- ◆ Specific reasons: Technology 26%; social media 21%; tech increasing exposure at younger age 14%; device distractions 6%

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What do you picture when you think of a Gamer?



This is gaming



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What do you picture when you think of a Gamer?

- ◆ 83% of female and 97% of male youth reported playing video games on some console, smartphone, or laptop.
- ◆ The average age of a US gamer is 31 years old and has been playing for 14 years (Entertainment Software Association, 2019).
- ◆ Gaming is growing for adults 50+, especially with women (Kakulla, B. 2019).
- ◆ Women are less likely to self-identify as gamers (Paaßen, et al. 2017)
- ◆ Demographics underrepresented in research are women, LGBTQ+ and racialized communities. Many statistics only include two genders.



Entertainment Software Association. (2019). Essential facts about the computer and video game industry.

Kakulla, B. (2019). Gaming attitudes and habits of adults age 50-plus. AARP. Doi, 10.

Paaßen, B., Morgenroth, T., & Stratemeyer, M. (2017). What is a true gamer? The male gamer stereotype and the marginalization of women in video game culture. *Sex Roles*, 76(7), 421-435.

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What is gaming?

- ◆ Video games are interactive media products, whereby the player is active, rather than a passive, consumer.
- ◆ Games can be played on many devices: smartphones, consoles, PCs and headsets.
- ◆ Players can play themselves, watch others (streaming), compete (esports), and develop (game design).
- ◆ Gaming occurs on a continuum from recreational, at-risk, problematic and disordered play (King & Delfabbro 2019)
- ◆ Most important is what the individual derives psychologically from the experience, their motivations for play, and the benefits and problems.



Neural basis of video gaming

- ◆ Neuroimaging study done on 154 healthy 14 yr old adolescents recruited from secondary schools in Berlin
- ◆ In a comparison between frequent gamers and infrequent gamers, it was found a higher volume in the left ventral striatum is associated with frequent video game playing and also exhibited enhanced dopamine release
- ◆ Postulated that “individuals with higher ventral striatum volume may experience video gaming as more rewarding”
 - ◆ Kuhn et al 2011

This is a gaming passion



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Positive effects noted with use of video games

- ◆ Benefits of gaming include positive cognitive, motivational, emotional, social, therapeutic and educational effects. (Granic et al., 2014).
- ◆ Children with autism spectrum disorder often report feeling more connected to peers when they are able to network with them on games
 - ◆ although other professionals express concern they may be uniquely susceptible to developing issues
- ◆ EndeavorRx is a video game that has been approved to be a prescription treatment for ADHD
 - ◆ Children aged 8-12
 - ◆ Approved June, 2020
 - ◆ Per "StatNews"- Akili (maker of EndeavorRx) was recently valued at close to 600 million dollars and made a deal in 2022 to go public via SPAC (Social Capital Suvretta Holdings Corp)
 - ◆ \$295 for a 3-month trial of EndeavorRx (for comparison \$60 for Animal Crossing on Nintendo Switch and \$358 for 30 of the 70 mg Vyvanse at Costco as of January 31, 2022 at Costco in Minneapolis area)
 - ◆ 52% of cash-pay prescriptions are ultimately filled

Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.

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Culture & Community

- ◆ There are some Discord and Twitch channels that embrace and support the LGBTQ+ community and creators can curate a very safe space for followers
 - ◆ Responsibility for enforcing community norms does often fall to individual creators, which can feel exhausting
- ◆ Given the culture of gaming's origin, it can be a place where people who feel alone in their day-to-day life can find a niche that they feel safe in
 - ◆ This can be a double-edged sword, leading to more time spent there and less feeling of fitting in with the “noobs”
 - ◆ This is also stereotypical, and certainly as stressed previously there are people with a passion for gaming from all demographics and many who feel completely comfortable and thrive in social settings

Esports and Streaming Services

- ◆ In 2019, Esports generated 1.1 billion dollars globally; est. to be 1.8 bill in 2022
- ◆ Over \$20M available in U.S. esports scholarships
- ◆ Discord has over 300 million registered users
- ◆ Twitch was acquired in 2014 by Amazon for \$970 million
- ◆ Microsoft just acquired Activision for \$68.7b



How it develops to gaming problem



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Cam Story



Harms

- ◆ The most common negative consequences of excessive gaming include:
 - ◆ Mood changes, including irritability, anger, oppositional behavior, aggression and boredom
 - ◆ Depression, anxiety, and/or suicidality
 - ◆ Poor physical health such as obesity, sleeping disruptions, physical pain
 - ◆ Poor diet, causing weight gain or malnourishment, and/or caffeine overconsumption
 - ◆ Interpersonal problems, such as conflict with family
 - ◆ Loss of physical world friendships
 - ◆ Disruption in work and school attendance and productivity
 - ◆ Financial problems

Part of the issue is what you are NOT doing, esp for adolescents and children (Brain is a use-dependent organ)

- Adolescents normally spend much of their time learning how to socialize, make friends, be part of a team and take on responsibility; one of the worst things excessive gaming is takes all these experiences away at the time when your brain is developing.
- Gamers do interact in online universes at times, but this interaction does not stimulate brain development and growth in the same way being in person does



Internet Gaming and Obesity

- ◆ Seated video game play is associated with increased caloric intake
- ◆ Also for each 1 hour per day of video games played, there is a 2-fold increase in obesity
- ◆ The relationship is more complicated however: given the rise in “Exergaming”, such as Nintendo Wii or Pokemon Go
- ◆ Lu et al. (2013) reviewed 14 studies of 28 different health video games published between 2005 and 2013 and observed significant reductions in obesity in six studies (all six of these were exergames)



Insomnia



Risk Factors

- ◆ Comorbidities include anxiety, depression, OCD, ADHD, Autism, substance use (cannabis, alcohol, nicotine, stimulants), gambling and problematic digital use (internet, social media).
- ◆ 92% anxiety, 89% depression, 85% symptoms of ADHD, 75% social phobia/anxiety, 75% OCD symptoms (González-Bueso et al., 2018).
- ◆ The high rate of comorbidity between gaming disorder and other disorders is clear, however a causal mechanism is difficult to tease out.
- ◆ GD tends to be higher for males than females and higher for young people rather than older people.

Validated Screening Tools

- ◆ The Internet Gaming Disorder Scale (Lemmens IGD-9 or IGD-27)
- ◆ IGDT-10 (Ten-Item Internet Gaming Disorder Test)
- ◆ Nine-Item Short-Form Scale to assess Internet Gaming Disorder (IGDS9-SF)

What do the experts say?

- ◆ The DSM V does not include “internet addiction”
 - ◆ DSM V was finalized in 2013
- ◆ The only behavioral addiction that has been formally recognized is gambling disorder
- ◆ Internet gaming disorder was included as a proposed diagnosis under investigation
- ◆ Of note: this condition does not include issues with internet in general or social media
- ◆ In late 2017, it was announced the WHO was adding video gaming disorder in the ICD11 as an official diagnosis
- ◆ “Treatment” is common in China and South Korea, but is not predicated on strong theoretical underpinnings

DSM-V Diagnostic Criteria

Internet Gaming Disorder-5 of 9 criteria must be met for the past 12 months:

- ◆ Pre-occupation with gaming
- ◆ Withdrawal symptoms when gaming is taken away (sadness, anxiety, irritability)
- ◆ Tolerance (need to spend more time gaming to satisfy the nerve)
- ◆ Inability to reduce gaming; unsuccessful attempts to quit gaming
- ◆ Giving up other activities, loss of interest in other activities due to gaming
- ◆ Continuing to game despite problems
- ◆ Deceiving family members or others about the amount of time spent on gaming
- ◆ The use of gaming to relieve negative moods
- ◆ **Risk – having jeopardized or lost a job or relationship due to gaming**

Gambling Disorder: at least 4 of 9 criteria must be met for the past 12 months AND not explained by a manic episode: (4-5 mild, 6-7 moderate, 8-9 severe)

1. Needs to gamble w/increased money to achieve the same effect (Tolerance)
2. Is restless or irritable when attempting to cease gambling (Withdrawal)
3. Repeated unsuccessful attempts to control, cut back or stop gambling
4. Preoccupation with gambling (thinking of getting ways to gamble, persistent thoughts reliving past gambling episodes)
5. Often gambles when distressed
6. After losing money gambling, returns to gamble another day (“chasing ones losses”)
7. Lies to conceal the extent of involvement with gambling
8. **Has jeopardized or lost a significant relationship, job or educational or career opportunity because of gambling**
9. Relies on others to provide money to relieve desperate financial situations caused by gambling

Prevalence Estimates

- ◆ In 2021, Stevens et al. (2021) determined a 3.05% worldwide global prevalence of gaming disorder, based on figures reported by 53 different studies that included 226,247 participants from seventeen countries.
- ◆ Stevens et al. (2021) adjusted this prevalence rate to 1.96%, when they limited their analysis to only the studies that adopted stringent sampling criteria.
- ◆ Males have higher rates of gaming disorder in many studies, as much as 2.5 times the rate of females (Stevens et al. 2021), although not all studies find this (e.g. King & Potenza, 2020) and sampling bias may be present.
- ◆ Young people, under 18, have consistently higher rates of GD than do adults.



Stevens, M. W., Dorstyn, D., Delfabbro, P. H., & King, D. L. (2021). Global prevalence of gaming disorder: A systematic review and meta-analysis. *Australian & New Zealand Journal of Psychiatry*, 55(6), 553-568.

King, D. L., & Potenza, M. N. (2020). Gaming disorder among female adolescents: A hidden problem? *Journal of Adolescent Health*, 66(6), 650-652.

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There is Convergence between Gaming and Gambling Disorder

- ◆ Both can occur in a variety of locations; technically a gambling disorder can occur entirely within an online casino in a virtual game (such as a WOW or a GTA casino in where virtual currency obtained by real-world money are used)
- ◆ Both involve achieving a state of "flow" or "time on device", and that is an almost narcotic state
- ◆ In gaming and gambling, the severity can be masked by the diagnostic criteria, and a "mild" disorder may be quite severe
 - ◆ 3 different criteria from substance use disorders (recurrent substance use disorder results in a failure of major role obligations at work, school or home; continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of substance and important social, occupational and recreational activities are given up or reduced) are collapsed into 1 criteria of Risk (jeopardized or lost a job, career, relationship or educational opportunity due to gambling or gaming)

“Lifting the lid on loot-boxes” -Gambling Aware; April 2021

- ◆ Around 5% of lootbox purchasers generate around half of industry revenue from lootboxes (study of 7,767 loot box purchasers)
 - ◆ 1/3 of these top 5% of spenders fall into the “problem gambler” category
 - ◆ There is also no evidence higher loot box spending is correlated with higher earnings meaning game developers are profiting from at-risk individuals and not from wealthy gamers

The industry itself uses terminology that acknowledges gaming is like gambling

- ◆ Being a “whale” carries a different weight for each company. Fifth planet games, developer of social games for both casual and hardcore audiences, starts classifying its players as whales when they spend \$100 or more a month. That’s a big jump from whales on Facebook, for instance, where social gamers could drop \$25 per month to meet the same qualification.
- ◆ 5th Planet chief executive Robert Winkler revealed at the Game Developers Conference Online in 2012 that with its game Clash of the Dragons, **40 percent of revenue came from 2 percent of players who spent \$1,000 or more. Ninety percent came from those who spent \$100 or more, and the top whale had spent \$6,700.**
- ◆ “We’ve found that most players are more willing to spend money to help out their fellow gamers than to try to defeat them,” he said. “As an example, players who take part in our ‘guilds,’ or groups of players who come together to accomplish communal missions, are 8.5 times more likely to monetize than players who do not belong to a guild, and the ARPU [average revenue per user] of players in our guilds is 53 times higher than other players.”
 - ◆ Details from “What it means to be a whale” by Stephanie Carmichael in Venturebeat

Various subheadings of problematic internet behavior

- ◆ Internet shopping (Amazon, Zulily)
- ◆ Social Media Use
- ◆ Pornography
 - ◆ In 2015 per psychology today, 4% of the web contains pornography, and 10-15% of internet searches are for pornography (Ogas and Gaddam 2012)
 - ◆ “The internet is for porn”; Song by Avenue Q
- ◆ Online Gambling
 - ◆ A specific kind of Gambling Disorder, which is in the DSMV



Video Games & Social Media activate the Brain System related to addiction

- ◆ Just like with substance use disorders, the reward system of the brain is hijacked and because less responsive to “natural” rewards like food and achievement
- ◆ Each new level or completed mission (or “like” on Instagram) provides a small hit of dopamine in the brain
- ◆ Video game loot drops and levelling up (as well as social media notifications) are set up with intermittent variable rewards (operant conditioning model)
 - ◆ Per experiments with mice, these are the most reinforcing, and would result in the most compulsive lever pressing of any reward schedule
 - ◆ You never know when you will obtain “the Master Sword” in World of Warcraft so you compulsively keep trying



How to prevent it



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Harm Reduction

- ◆ Online gaming is an integral feature of our modern world, work to minimize harmful effects
- ◆ Abstinence is only one of the options for reducing the harms of gaming, along with others
- ◆ Maintain multiple hobbies and activities
- ◆ Choose games types based on ages and values
- ◆ Monitor Indirect Gaming (Streaming, Games chat, Physical social gaming)
- ◆ Monitor Financial Expenditure (Loot Boxes, Skins purchasing, Esports Betting, Micro-transactions, Social Casino Games)

Modeling

- ◆ OF NOTE, the most powerful thing we do is MODEL BEHAVIOR
- ◆ A great thing is to find a local showing of the movie "Screenagers", I took my kids twice, and now they call me a "Scrownup"
- ◆ Physician, first heal thyself



How to treat it



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Lived Experience

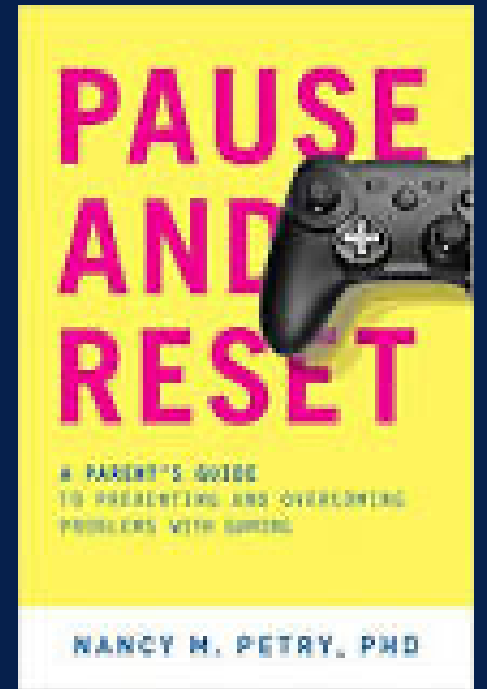
- ◆ "I feel ridiculous talking about my game addiction. I feel I am too old to have this kind of problem. I wish I could find a therapist that could understand my situation." - anonymous gamer (Luna-Rose & Adair)
- ◆ "I'm going to therapy but I don't think it's helping because they don't understand gaming problems. I suffer in military from loneliness and a job I don't want to do. I can't do something active with my life after it because I keep escaping to games because it's the only way I forget about my day, and my friends both from Discord and from real life play with me... making it harder to resist." –Gamer

No FDA-Approved Medications (Zajac 2020)

- ◆ 22 studies were included in this review with 7 evaluating medications, 8 evaluating cognitive-behavioral therapy, and 7 evaluating other non-medication approaches.
- ◆ In summary, the research on medications for IGD is inconclusive. **Bupropion shows some promise but remains in initial stages of evaluation. There was no evaluation of naltrexone in these studies (established treatment for gambling disorder).**
- ◆ Current evidence shows **mixed outcomes for cognitive-behavioral therapy**. Additional research is needed on these approaches.
- ◆ In general, weaknesses in the designs of the reviewed studies, including lack of appropriate control groups, nonrandom assignment to treatment conditions, and small sample sizes, prevent strong conclusions about the efficacy of treatments for IGD.

Per the book “Pause and Reset” by Dr. Nancy Petry

- ◆ In treating adolescents struggling with video gaming use disorder, it is often helpful to focus on assisting parents in effectively setting boundaries
- ◆ The adolescent may not be able to recognize the problems obvious to outsiders, despite objectively noticing problems in their lives and functioning
- ◆ The general behavioral treatment paradigm is focused on rewarding and replacing alternative behaviors to gaming, **NOT PUNISHMENT**
 - ◆ Step 1: Record: Monitor quantify gaming
 - ◆ Step 2: Replace: Finding healthy recreational activities
 - ◆ Step 3: Reward: Positive reinforcement for nongaming



Assertive Communication: Not passive or aggressive

- ◆ Nonjudgemental
- ◆ Focus on facts
- ◆ Approach subject openly and with love



Think of Gambling treatment options

- ◆ Despite being a recognized behavioral addiction included in the DSMV, it is often difficult to find both outpatient and residential resources that specialize in treating gambling disorder (and even more difficult to have these options paid for by insurance)
- ◆ Gaming is decades behind the treatment infrastructure for gambling, so even with a high level of severity, options can be limited for treatment

Case AB

- ◆ 35-year-old physician who was referred to me by physician monitoring program. Has no history of alcohol use disorder, but has a history of mood disorder and presented on bupropion 300 mg po daily. He reported feeling his primary issue was not a mood disorder, but was related to gaming, and had a history of gaming to the point of having difficulty in work and went through a divorce. His parents attended an appointment and attested to feeling his gaming was related to his mood and work issues.
- ◆ Patient was assessed and reported having 6 of the Internet Gaming Disorder Criteria in the past year.

Outcome for AB

- ◆ Started on oral naltrexone and experienced an improvement in cravings and reduction in gaming relatively quickly
- ◆ Patient continues to game 2-3 times per week for 1-2 hours, but this does not interfere with work at this time
- ◆ Has been working as a physician for close to 8 months
- ◆ Has not experienced side effects from his medication
- ◆ Is feeling ready to look for an intimate relationship again, and has a good relationship with a room-mate who is a friend

Case AL

- ◆ Patient is a 17-year-old adolescent female who is brought in with her parents due to playing excessive amounts of world of warcraft, in which she is part of a guild
- ◆ She was formerly an A student in gifted class, and is now at risk of being expelled from school due to her level of truancy; she has been also spending a lot of money on lootboxes, and spent thousands of dollars of her parent's money via stealing their credit card number
- ◆ She has now become alienated from her friends, and gained a lot of weight due to the sedentary nature of her gaming; she has also been having significant insomnia, and reports only sleeping 3-4 hours per night; as she often goes on "raids" late at night

Case AL- Resolution

- ◆ Patient's mother helped her set limits on her phone service, so her phone automatically turns off at 10 PM, and her sleep has improved dramatically
- ◆ She has always wanted to do Karate, and was enrolled in a martial arts class
- ◆ Patient was interested in formal treatment, but insurance would not cover it. She started individual therapy with a therapist trained in gambling disorder

Final Takeaways

- ◆ Internet gaming disorder is a recognized diagnosis within the DSM-5, and has been adopted by the WHO
- ◆ Risk Factors for Internet Gaming Disorder include anxiety, depression, OCD, ADHD, Autism, substance use (cannabis, alcohol, nicotine, stimulants), gambling and problematic digital use (internet, social media).
- ◆ Validated screening tools include IGD-27 and the IGD-10
- ◆ Generally, treatment should involve use of harm reduction strategies, not attempted abstinence
- ◆ There is limited evidence for use of bupropion as a treatment tool in this population (Zajac 2020).

Thanks

- ◆ Please feel free to contact me at ebrunner@hazeldenbettyford.org with any questions
- ◆ cam@gamequitters.com

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