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How to manage technology in today's world of behavioural addictions

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1

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Technology in our worlds

This presentation will explore the new behavioural addictions that have become more prevalent with today's ever changing technology. We will look at online dating, cryptocurrency, porn addiction, social media, scrolling, learning on how the dopamine reward system is turning these activities into maladaptive addictions.

1) How seemingly innocent activities can turn into addictions.
2) Warning signs to recognise maladaptive behaviour in technology.
3) How do we manage technology in our society with regards to mental health?

2

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Technological ("Innocent") activities

- Online dating,
- Crypto-currency,
- Pornography,
- Video games,
- Social media: Facebook, Instagram, Linkedin, MeWe, Twitter,
- Learning: Scrolling short videos, Youtube, Ticktock, Entertainment,
- Communication: Whatsapp, Telegraph, Messenger - FB,
- Online gambling,
- Shopping.

3

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Why do we get obsessive/compulsive?

- Notifications we get on our phones – from social media, messaging apps, and others – activate dopamine in our brains.
- The most addictive smartphone functions all share a common theme: they tap into the human desire to connect to other people, according to a new paper published in *Frontiers in Psychology* by Dr. Veissière and Professor Stendel.
- On Social media an individual gets a notification (like, mention, email) the brain receives a rush of dopamine along the mesolimbic reward pathways causing them to feel pleasure. This reward occurs with minimal effort from the individual, in effect creating a short-cut like narcotics. The brain rewires itself through this positive reinforcement, making people desire likes, retweets and reactions to posts.

4

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Why do we become obsessive/compulsive?

"According to a new study by Harvard University, self-disclosure on social networking sites lights up the same part of the brain that also ignites when taking an addictive substance. Due to the effect on the brain, social media is addictive both physically and psychologically." (Hiliard, 2019).

5

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Why do we become obsessive/compulsive?

- The reward centers of the brain are most active when people are talking about themselves. In the real world, they estimate that people talk about themselves 30 to 40% of the time.
- Social media is all about showing off one's life and accomplishments — so people talk about themselves a staggering 80% of the time. When a person posts a picture they may receive positive social feedback, which stimulates the brain to release dopamine, rewarding that behavior and perpetuating the social media habit.

6

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Why do we become obsessive and compulsive?

- ★ Social media can become problematic when individuals using social media as a coping mechanism to relieve stress, loneliness or depression.
- ★ Social media provides individuals with continuous rewards that they don't receive in real life so they engage with social media more and more.

7

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Predisposition to technology compulsion?

- ❖ Adolescents under 20 years old,
- ❖ Genetics and environment,
- ❖ Individuals with addictions,
- ❖ People with mental health and co-occurring morbidities,
- ❖ Individuals in recovery (cross addiction),
- ❖ Individuals who are easily dysregulated.

8

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Is technology an addiction?

Professor Reed - Swansea University believes there are three distinct ways that tech addiction mirrors substance abuse:

- Disruption - it negatively impacts your day-to-day
- Withdrawal - you suffer when you're not using it
- Tolerance - you need more and more of it to get the same effect

9

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Social Media use and Substance use disorders

- Mood modification (i.e., engagement in social media leads to a positive change in emotions),
- Salience (i.e., behavioral, cognitive, and emotional preoccupation with social media),
- Tolerance (i.e., ever-increasing use of social media over time),
- Withdrawal symptoms (i.e., experiencing unpleasant physical and emotional symptoms when social media use is restricted or stopped),
- Conflict (i.e., interpersonal problems ensue because of social media usage), and
- Relapse (i.e., addicted individuals quickly revert back to their excessive social media usage after an abstinence period).

10

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Technology's effects on the brain and body

1.Technology Use Can Create Structural Changes in the Brain.

- Pings, alerts, rings, and notifications can shift our focus that can lead to difficulties with paying attention.
- This can lead to poorer performance on tasks: academic, personal, and professional.
- Researchers from France and the United Kingdom found that frequent media multitasking may contribute to diminished gray matter in the anterior cingulate cortex, an area of the brain where attentional control and emotional regulation reside (Loh & Kanai, 2014).

11

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Technology's effect on the brain

2. Technology Use Can Wear Out the Pleasure Center of Your Brain

- Dopamine is the neurotransmitter released in response to pleasure or excitement.
- Constant technological inputs can hyperstimulate our brain's pleasure centers (ventral tegmental area, nucleus accumbens, and basal ganglia).
- This overstimulation can make our brain's pleasure centers less responsive to normal enjoyable experiences; e.g. eating a meal, reading a book, having a conversation, or holding hands.

12

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Technology's effects on the brain and body

3. Technology Use Can Reduce Physical Activity

- ★ Our digital gadgets can keep us preoccupied indoors causing us to miss out on physical activity and outdoor experiences.
- ★ Bodily self-care requires regular physical activity that strengthens our muscles and cardiovascular system.
- ★ Studies have linked increased computer and technology use with a sedentary lifestyle and obesity (Fotheringham, Wonnacott, & Owen, 2000).

13

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Technology's effects on the brain and body

4. Technology Use Can Hinder Our Memories

- ★ Research shows we are remembering less information because we know we can look it up on Google or other digital platforms.
- ★ One study (Sparrow, Liu, & Wegner, 2011), participants were asked to type 40 trivia facts. Half of the participants were told the computer would save their work, while the other half were told the computer would erase what they had typed.
- ★ The group who had been told the computer would erase their document performed much better on the task than the group who had been told the computer would save what they had typed.
- ★ This phenomenon of decreased long-term and working memory is often called - "Google Effect".
- ★ Researchers believe cognitive conditions like Alzheimer's disease could be associated with failing to maximize our cognitive capacities, the Google Effect becomes alarming.

14

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Technology's effects on the brain and body

5. Technology Use Can Reduce Our Sleep

- ★ People hit the bed at night with phone in hand and make one final check of email or social media
- ★ Due to the dopamine hit it becomes very easy to click and scroll, and before you know it you have sacrificed your sleep.
- ★ The blue light from your screen may disrupt your natural sleep process,
- ★ Sleep is impaired because you can't stop thinking about your friends post or the news,
- ★ Reduced sleep increases the risk of psychiatric disorders—including anxiety and depression
- ★ Associated with lower overall brain activity, impacts productivity, physical safety, and weight management.

15

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Warning signs

- Generally an inability to control use of the technology,
- Difficulties with personal and professional responsibilities,
- Continuing to use the technology despite negative consequences,
- Continued problems over an extended period,
- May experience withdrawal symptoms if access to the technology is cut off,
- May require greater time or intensity in the technology use behavior to feel the same effects,
- May be physical symptoms such as eye strain, headaches, and disrupted sleep.

16

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How to manage technology

- ★ No technology 1 hour in the morning and evening,
- ★ Better methods to regulate your emotions,
- ★ Set a timer on your phone,
- ★ Blue light filter on your phone in the evening,
- ★ Engage with your community,
- ★ Meditation and exercise,
- ★ Create a healthy relationship with your technology.

17

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Treatment

- ★ Individual Therapy,
- ★ Group therapy,
- ★ Mutual aid groups,
- ★ Residential treatment,
- ★ Trauma therapy.

18

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Technology and the Law

- Governments are attempting to legislate to mitigate the effects of technology.
- US government: Social Media Addiction Reduction Act (or SMART for short) which aims to “prohibit social media companies from using practices that exploit human psychology or brain physiology to substantially impede freedom of choice.”
- Social media companies are in theory not allowed to purposefully devise methods for keeping people unhealthily hooked to their platforms.

19

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Technology and the law

- Meta is being sued by 33 states in America over claims that the youths mental health has been endangered by Instagram
- The suit alleges that Meta strives to ensure that young people spend as much time as possible on social media despite knowing that teenage brains are susceptible to the need for approval in the form of likes from other users about their content.
- Meta deceptively denied publicly that its social media is harmful, the lawsuit said. Nine other states are expected to file similar lawsuits on Tuesday, bringing the total number of states suing to 42.

20

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Value of Industries worldwide

- Porn $ 97 Billion
- Social Media $261.45
- Mobile phones $500 billion
- Video games $455.3 Billion 2024
- Online dating $3.15 Billion
- Online gambling $100.9 Billion
- Tobacco products $965.1 Billion
- Alcohol $1. 020 Trillion (Home: supermarkets and convenience stores)
- Alcohol $646.9 Billion (Out of home: Restaurants and bars, clubs)
- Narcotics $500 Billion

21

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Technology and Addiction

- ★ Thank you for your time.
- ★ Any questions or comments?

22