

Digital Technology and Mental Health Interventions: Opportunities and Challenges

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ABSTRACT

The growth of the Internet, mobile phones, social media and other digital technologies has changed our world in many ways. It has provided individuals with information that was previously only available to a select few. The availability of data in real time has presented hopes of intervening more efficiently and managing health problems by leveraging limited human resources. It also has an impact in changing the roles of providers and patients and in legal and ethical issues including privacy in digital health interactions. This paper will discuss why digital technology has received recent attention in the area of mental health, present some applications of technology for mental health to date, explore the challenges to full implementation in clinical settings, and present future opportunities for digital technologies.

Keywords: Digital Health, Mobile Health, Mental Health, Technology

The world we live in today is heavily reliant on technology. From smartphones to laptops, we use technology for work, entertainment, and communication. But while technology has brought many benefits to our lives, it can also have negative effects on our physical and mental health.

In our ever-changing world, the use of technology is continuously expanding. It influences every area of our lives, from our ability to communicate with loved ones to accessing information at our fingertips. Unfortunately, we have also seen a number of negative effects of technology on mental health as well.

While technology has opened up links for individuals to readily access information, help, and support, there are significant risks associated with its increased usage. With technology becoming more prevalent in children's lives, it's important to decide what age kids should get a phone as there can be lasting effects of phone usage at an early age. Specifically, screen time and social media use among kids and teens have been linked with an increased prevalence of mental health concerns. The effects of technology on children and teens can have an impact on social skills, their development and can be linked to a number of other subsequent factors.

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Negative Mental Health Effects

Research has indicated that internet addiction, particularly among younger demographics such as teenagers, is becoming a widespread issue. It has been linked to depression, low self-esteem, and loneliness – symptoms that often lead to diagnosable mental illnesses and worsening issues that were already present. The passive use of social media sites (such as Instagram, Twitter, Snapchat, and Facebook) is specifically linked to being a risk factor for increased levels of depression. Overall, in terms of the relationship between screen use and both physical and mental health outcomes, there have been several studies that suggest higher levels of screen use in children and adolescents is associated with reduced physical activity, increased risk of depression, and lower well-being.

Prolonged technology use can lead to mental health problems such as anxiety, depression, and social isolation. Heavy use of social media has been linked to decreased self-esteem and an increased risk of developing mental health issues. Studies have also found that individuals who spend more time on social media are more likely to experience symptoms of anxiety and depression. Additionally, poor sleep caused by technology use can exacerbate any mental health issues that are already present.

How & Why Heavy Technology Use Impacts Mental Health

Social media use has been linked to increased symptoms of anxiety and depression. When individuals use social media, they are often exposed to images of people living seemingly perfect lives, which can make them feel inadequate or inferior. This can exacerbate feelings of anxiety and depression, as individuals may feel like they are not living up to the standards set by others on social media.

As noted above, another reason for the link between prolonged technology use and anxiety and depression is the impact of blue light on our sleep patterns. The blue light emitted by screens can interfere with our natural circadian rhythms, which can lead to sleep disturbances and poor sleep quality. Poor sleep has been linked to mental health issues, including anxiety and depression.

Prevalence

While not all mental health concerns among young people can be linked to technology, it is important to recognize the vast amount of children who are impacted by these issues. Research finds that 1 in every 5 children between the ages 13-18 have, or will have, a serious mental illness before they reach adulthood. Within this group of children:

- 11% are mood disorders
- 10% are behavior or conduct disorders
- 8% are anxiety disorders

Unfortunately, the effects of technology on children and youth are not only spreading to a larger population, but they have also shown to be long-lasting as well. To put things into perspective, about 50% of lifetime mental illness cases started at the age of 14 and 75% began by the age of 24. With this in mind, it is important to take cautionary steps to mitigate potential risk factors for our children, including their access to technology. These steps can include adding parental controls to limit the amount of time your children can have on their mobile device or while watching television. It is important to keep in mind how a child's exposure to technology and social media can leave a lasting impact on their mental health.

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As their parents, it is your duty to find other activities for your children to become involved in. Whether that means enrolling them in a child's summer camp, putting them in art classes, or even just organizing extra parent-child bonding activities throughout the week. Being involved in these other activities can have positive effects on children's behavior and their quality of life. Having different activities available means that your children will not solely have to depend on a screen for entertainment. Ultimately, focusing less on technology usage and prioritizing other activities can stimulate your child's brain and have positive effects that will ultimately benefit your child.

How You Can Help?

It may be nearly impossible to avoid technology in all forms, but it is important to monitor your kids and limit the amount of time spent on social media or looking at a screen. The American Academy of Pediatrics recommends less than one to two hours of entertainment screen time per day for children and discourages the use of any screen media by children under two years of age. Additionally, using screens for communicating with friends and loved ones may be beneficial for some children and teenagers, but it is important that parents monitor this use to ensure that it is positive. It is recommended that parents and caregivers use technology alongside children and youth, and engage them in discussions about safe and healthy media use. This can help your child create healthier habits when it comes to using technology and social media that will benefit them in the future.

Because children don't start showing symptoms until they are around 8 to 10 years old, mental illness in kids can go undetected. As parents, it's imperative that you learn the tell-tale signs and symptoms associated with mental health disorders so you can get your child the treatment they need should an issue be present. Below are some of the most common warning signs in teens and adolescents:

- Extreme mood swings
- Drug or alcohol use
- Severe changes in sleeping habits, personality traits, and behavior
- Difficult time concentrating
- Extreme sense of worry or fear during daily activities
- Attempting to harm one's self or thinking about it
- Partaking in risky behaviors that can lead to harming themselves or others
- Sudden weight loss or weight gain
- Feeling withdrawal or sad
- Signs of addictive behavior in regards to the internet

If you suspect that your child may be experiencing a mental health condition, do not wait to seek help. There is no shame in going to a doctor or clinical psychologist that specializes in counseling for kids when it comes to mental disorders. If you don't know where to go for help, consider talking to your child's school counselor, their pediatrician, or even a mental health specialist within your area. Natural alternatives to drugs include CBD for kids, which has shown promise in treating anxiety and signs of depression in children prone to ADHD.

Even if your child is not showing symptoms of a mental health disorder but appears to be a little too attached to their phone or computer, it's important that you sit down with them and explain the dangers of technology. Creating these boundaries and informing your children about potential threats is an excellent way to stay prepared should an issue arise. Create an open discussion with your children and listen to their thoughts and concerns about social media. Does screen time support their health and well-being? Do they show depressive symptoms when talking about their social networks? Moving forward, try to be as vigilant as

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possible when it comes to monitoring their screen time. By being prepared and being open with your children, you'll hopefully be able to prevent or worsen mental health conditions within your kids. And remember, if your child does need mental health treatment, get them help as soon as possible. To mitigate the negative effects of heavy technology use on mental health, it is important to adopt strategies for managing our technology habits. Additionally, it is important to be mindful of the impact of social media on mental health and to remember that social media often presents an unrealistic and curated version of reality. Here are some strategies we recommend:

- **Take Breaks:** One of the most effective ways to mitigate the risks of prolonged technology use is to take frequent breaks. We recommend taking a 10-15 minute break every hour to stretch, stand up and walk around.
- **Use the 20-20-20 Rule:** Another strategy to reduce eye strain is to use the 20-20-20 rule. Every 20 minutes, look away from your screen and focus on an object that is 20 feet away for 20 seconds.
- **Exercise Regularly:** Exercise is essential for maintaining good physical and mental health. Regular exercise can help reduce stress and anxiety and improve sleep quality.
- **Practice Good Posture:** Poor posture can cause physical health problems such as neck and back pain. When using technology, it is important to practice good posture by sitting up straight and keeping your shoulders relaxed.
- **Set Limits on Screen Time:** Setting limits on screen time can help reduce the risks associated with prolonged technology use. Experts recommend limiting screen time to no more than two hours per day for children and teenagers.

CONCLUSION

While technology is improving access to mental health services, it also contributes to more mental illness in general. Because people spend so much time using devices, they're less likely to have meaningful social interactions. This also contributes to feelings of isolation. Interactions online also tend to be negative. Social comparison, feelings of missing out, and cyberbullying all stem from the content we see online. These negative impacts lead to more depression and anxiety. Our bodies experience the negative effects of technology, too. More screen time can disrupt sleep, especially if this screen time is before bed. And the longer people spend using devices, the less inactive they become. But both disrupted sleep and inactivity worsen mental health. The addictive patterns just continue the cycle. It's hard to put technology down because of dopamine's motivational properties. Since this causes feelings of addiction to devices, it's hard to stop using them even if we know they're bad for our mental health. Like everything, using technology in moderation can help with managing negative impacts. For instance, avoiding screen time at least 30 minutes before bed can reduce the poor effects it has on sleep. And reducing social media use to 30 minutes a day significantly reduces the most common mental health difficulties.

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Conflict of Interest

The author(s) declared no conflict of interest.

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