SCREEN TIME: ITS IMPLICATIONS ON MODERN SOCIETY

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Abstract. *This paper seeks to discuss the myriad of relationships that screen time has with impacts on our health, daily habits, and future trends. This is as it considers the history and growth of screen technology, from traditional televisions to contemporary smartphones that have managed to effectively saturate society. An increase in the amount of time spent in front of computer screens has raised concerns about implications for physical and psychological health. It also causes complications related to obesity, sleeping disturbances, and negative self-comparison from the use of social media. For all these, it will be providing an applied solution in the sense of offline activities and frequent breaking of screens. Further, the report will go into detail about the rise of the Augmented Reality (AR) technology craze and what it may portend, to many, leading into addictive and distracting behaviors. As screens are increasingly integrated into every aspect of life, finding balance between screen use and overall well-being becomes of increasing importance. This report provides thus a value of orientation for policymakers and stakeholders with a genuine interest to gain orientation on this diffuse and highly complex topic of screen time.*

Keywords: *addiction, digital, health, mental, social, technology*

Introduction

In a world increasingly dominated by glowing screens, the question of "screen time" has become more than just a modern dilemma; it's a complex tapestry woven into the fabric of our daily lives. Screen time, defined as "the amount of time spent using a device with a screen such as a smartphone, computer, television, or video game console" [1], has infiltrated every aspect of our existence, from education and entertainment to communication and work. In today's hyper-connected world, the balance between screen engagement and real-world interaction has become paramount for individual well-being and societal health. As technological advancements continue to shape our interactions, understanding the evolving dynamics of screen time becomes increasingly crucial for navigating the digital landscape.

While these devices undeniably offer a plethora of benefits, concerns regarding their impact on our physical and mental well-being have steadily risen. This report delves into the intricate relationship between screen time and our lives, exploring its historical trajectory, its multifaceted health implications, potential solutions to mitigate its negative effects, and its projected influence on the future.

Screen time changes during the last decade

The narrative of screen time, often romanticized as progress, reveals a more complex reality. From flickering TVs to ubiquitous smartphones, our engagement with screens has skyrocketed, raising critical questions about its impact across demographics and regions. The ubiquity of screens has reshaped societal norms and behaviors, necessitating a nuanced understanding of its implications for human health and social dynamics. As screens continue to evolve and integrate into various facets of daily life, exploring the shifts in screen time patterns over the last decade offers valuable insights into the changing landscape of human interaction with technology.

While television revolutionized entertainment in the 1950s, concerns emerged swiftly. Today, 93.5% [2] of Americans stream TV online, highlighting a potential substitution effect, but

not a decline in overall screen time. Interestingly, the average American spends more time on their mobile device (3 hours 30 minutes [2]) than watching TV (1 hour 43 minutes [2]).

Personal computers, initially work-oriented, morphed into entertainment hubs, further entrenching us in the digital world. This, coupled with the rise of affordable computers, led to a global rise in screen time. However, the Comparitech report paints a concerning picture: over 2 hours and 30 minutes [2] daily are dedicated solely to social media globally, raising concerns about addiction and its impact on mental well-being.

The arrival of smartphones with constant connectivity and ever-evolving apps ushered in a new era of digital dependence. Notably, 90.9% of people globally use the internet to stream [2], highlighting a shift in entertainment consumption patterns. This constant engagement blurs the lines between work and leisure, potentially impacting productivity and personal relationships.

The impact of screen time varies across age groups. While children and adolescents are particularly vulnerable, technology can also offer educational resources and foster creativity. The critical question lies in finding a balanced approach. Adults face similar challenges, with potential benefits like work opportunities and social connections balanced against health concerns.

Developed nations like the US boast high average screen times (7 hours 4 minutes [2]), while developing countries lag behind. However, the gap is narrowing due to increasing internet penetration and smartphone adoption globally. Cultural factors also play a role, with varying attitudes towards screen time across different regions.

Table 1

Year	Average Screen Time	Change Over Previous Year
Q3 2013	6 hours 9 minutes	-
Q3 2014	6 hours 23 minutes	↑ 3.8%
Q3 2015	6 hours 20 minutes	↓ 0.8%
Q3 2016	6 hours 29 minutes	↑ 2.4%
Q3 2017	6 hours 46 minutes	↑ 4.4%
Q3 2018	6 hours 48 minutes	↑ 0.5%
Q3 2019	6 hours 38 minutes	↓ 2.5%
Q3 2020	6 hours 54 minutes	↑ 4%
Q3 2021	6 hours 58 minutes	↑ 1%

Negative Effects of Too Much Screen Time

The pervasive presence of screens, while offering undeniable utility, comes with a potential price: a negative impact on our health. Deconstructing this impact requires a critical examination. Understanding the multifaceted nature of screen time's impact on health is crucial for developing effective strategies to mitigate its negative consequences and promote holistic well-being. Moreover, recognizing the disparities in how different demographics experience and are affected by excessive screen time sheds light on the nuanced challenges and opportunities for intervention in promoting healthier screen habits across society.

Excessive screen time can trigger a cascade of detrimental physical health consequences. Key concerns include the sedentary nature of screen use contributing to an increased risk of obesity and related chronic diseases like heart disease and diabetes. Additionally, prolonged screen use can lead to chronic musculoskeletal problems like neck and back pain due to poor posture.

Furthermore, the blue light emitted from screens disrupts sleep patterns, suppressing melatonin production and leading to sleep disturbances, which can impair cognitive function, mood, and overall health. Vision is also impacted, with excessive screen time potentially causing eye strain, dry eyes, and blurred vision.

The impact of screen time extends beyond the physical realm, potentially affecting mental health as well. There are suggestions of potential links between excessive screen time and anxiety and depression, particularly in children and adolescents. However, the exact nature of this relationship requires further research and consideration of confounding factors.

Additionally, the constant stimulation and social comparison prevalent on social media can contribute to feelings of inadequacy and low self-esteem. Furthermore, excessive screen use, particularly in children, can impede social development, hindering crucial aspects such as social skills and emotional intelligence.

Mitigating the risks associated with screen time necessitates a multifaceted approach. This includes setting clear boundaries, especially for children, establishing screen-free zones, and limiting screen time. Prioritizing physical activity and promoting real-world interactions are also crucial. Encouraging outdoor play, fostering face-to-face communication, and engaging in physical activities can help offset the negative impacts of screen time and promote overall well-being.

Digital Dependency: A Modern Affliction

Technology addiction, also known as digital addiction, internet addiction, or internet use disorder, refers to obsessive behavior related to technology, encompassing activities such as gaming, social media, online shopping, and video watching. Screens and technology permeate our daily lives, particularly affecting young people and altering their lifestyles. "While the many benefits of technology should not be ignored, it is important to acknowledge the negative effects technology has had" [3]. As society grapples with the complexities of digital dependency, exploring effective intervention strategies and support systems becomes essential for fostering healthier relationships with technology.

On a neurological level, technology addiction mirrors chemical addictions, triggering the release of dopamine and other feel-good chemicals in response to expectation followed by reward. This reward system is evident in activities like winning a video game level or receiving likes on social media posts. With prolonged exposure, individuals develop a craving for this dopamine release, often necessitating increased stimulus for the same effect. "On a neurological level, technology addiction operates similarly to chemical addictions, in that expectation followed by reward leads the brain to release dopamine and other feel-good chemicals" [3].

The mental health implications of technology addiction, particularly social media use and excessive screen time among children and teens, are profound. "Studies suggest that social media use can be associated with problems such as depression, anxiety, low self-esteem, and affected concentration"[3]. Moreover, excessive technology use in youth can influence their future relationships and emotional development, often at the expense of human interaction. "Individuals who may be struggling with a technology addiction often begin to isolate themselves. It is not uncommon for those with a technology addiction to also have a mental health disorder as well." [3]. "Some people may turn to electronics as a way to cope with mental health conditions. They may use it as an "escape" or as a way to feel better. However, doing so in excessive ways can quickly become unhealthy and make matters worse for a person's physical and mental health" [3].

Combating the Negative Effects of Screen Time

Even though using a device with a screen has inevitable negative effects there are methods of mediating the severity of these effects and even fully counter them. Implementing strategies to mitigate the negative effects of screen time is essential for promoting healthy screen habits and overall well-being in today's digitally driven world. However, the effectiveness of these strategies depends on various factors, including individual behaviors, environmental influences, and societal norms. By examining the intersection of personal responsibility and systemic support in combating the negative effects of screen time, this section aims to provide actionable insights for individuals, communities, and policymakers striving to promote digital well-being.

Ways to reduce eye strain:

1. Blink Often: Engage in frequent blinking to naturally lubricate your eyes and prevent dryness.
2. Use Artificial Tears or Humidifier: If your work environment is warm and dry, consider using artificial tears or a humidifier to maintain moisture in the air and prevent eye dryness.
3. Take Regular Breaks: Follow the "20-20-20 rule," which involves looking at an object 20 feet away for 20 seconds every 20 minutes. This practice helps to rest your eyes and prevent strain from prolonged screen use.
4. Invest in Computer Eyeglasses: Consider using computer eyeglasses to reduce glare on the screen, improve image focus and contrast, and ultimately reduce eyestrain. These glasses differ from blue light-blocking glasses and may offer additional benefits. Choose wisely when shopping online.
5. Adjust Screen Brightness and Contrast: Ensure that your screen brightness and contrast settings match the ambient light around you. Bright screens in dim environments can increase eye strain.
6. Use a Matte Filter: Reduce screen glare by applying a matte filter directly onto your computer screen. These filters adhere to the screen surface and help diffuse light, making it easier on the eyes.
7. Maintain Proper Distance: Sit approximately 25 inches away from your computer screen and adjust its position so that your gaze is directed slightly downwards. This positioning can help reduce strain on your eyes and neck [4].

In summary, reducing eye strain involves blinking often, taking regular breaks using the 20-20-20 rule, using computer eyeglasses or blue light-blocking glasses, adjusting screen brightness and contrast, using a matte filter, and maintaining an appropriate distance from your screen. These practices can help alleviate discomfort and prevent long-term eye damage.

Tomorrow's Interface: AR Advancements and Screen Time

Augmented Reality (AR) technology has the potential to revolutionize digital content interaction by seamlessly blending the virtual and real worlds, providing immersive experiences. However, like any groundbreaking technology, AR also presents a range of challenges and concerns that require careful consideration. Anticipating and addressing the potential pitfalls of AR technology is crucial for ensuring its integration into society enhances rather than detracts from human experiences.

Increased Dependency and Addiction: AR's immersive experiences may lead users to become overly dependent on it for entertainment, social interaction, or work-related tasks, potentially resulting in addiction. "Excessive use of AR could result in reduced productivity, social isolation, and adverse effects on mental and physical health" [5].

Distraction and Safety Concerns: By overlaying digital content onto the real world, AR can be distracting and hazardous, especially in situations such as driving, walking, or operating machinery. "The temptation to engage with AR content may lead to accidents and injuries if users fail to prioritize their safety and that of others" [5].

Negative Social Impact: As AR blurs the boundary between the real and virtual worlds, it may affect real-life social interactions. Overuse of AR could diminish face-to-face communication skills, reduce empathy, and disconnect users from their physical environment. "Additionally, AR experiences may create a sense of exclusion for those who cannot afford or access the technology, exacerbating social inequalities" [5].

Digital Fatigue and Overstimulation: The constant influx of augmented content and digital stimuli may result in digital fatigue and overstimulation. "Extended exposure to AR experiences may result in mental exhaustion, reduced attention span, and an inability to disconnect from the digital world" [5].

Conclusion

The trajectory of screen time reveals a complex interplay between technological advancements, social shifts, and individual choices. While offering undeniable benefits, screens have become ubiquitous, potentially impacting our physical and mental well-being across demographics and regions. Recognizing these risks is crucial for navigating the evolving landscape of screen time. As we look towards a future saturated with immersive experiences, voice interfaces, and "smart" everything, a critical lens is essential. Proactive measures like setting boundaries, prioritizing real-world interaction, and fostering digital literacy are paramount. Ultimately, ensuring that technology serves to enrich our lives, rather than define them, requires a balanced and critical approach in the years to come. Embracing this holistic perspective will be fundamental in shaping a future where technology harmoniously coexists with human well-being and societal advancement.

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