**Dopamine-Scrolling: A Modern Public Health Challenge Requiring Urgent Attention**

Sharpe, B. T.1\* & Spooner, R. A.1

1Institute of Psychology, Business, and Human Sciences, University of Chichester, Chichester, UK

**Author Note**

\***Corresponding author:** Dr Benjamin T. Sharpe, Institute of Psychology, Business, and Human Sciences, University of Chichester, Chichester, UK. Email: b.sharpe@chi.ac.uk. The authors hold no conflicts of interest associated with the publication of the following manuscript. No funding was received, ethical approval and informed consent were not required, and no data was generated for this manuscript.

**Dopamine-Scrolling: A Modern Public Health Challenge Requiring Urgent Attention**

*This article examines the emerging phenomenon of "dopamine-scrolling" and its implications for public health, particularly regarding mental wellbeing and digital behaviour patterns.*

The proliferation of social media platforms has given rise to a distinct behavioural pattern known as dopamine-scrolling - the habitual act of scrolling through social media feeds in pursuit of novel, entertaining content. This behaviour differs fundamentally from other forms of digital engagement, characterized by active seeking of entertaining content, rapid platform switching, and significant time investment¹. Recent research indicates that over a billion people spent an average of three hours scrolling through social media in 2020², with some countries reporting self-reported averages exceeding 4 hours daily³.

Unlike doom-scrolling, which focuses on negative content4, or Internet Addiction Disorder (IAD), which represents a clinically significant pattern of impairment5, dopamine-scrolling seemingly operates through reward mechanisms and variable reinforcement schedules, making it a unique and potentially habit-forming behaviour.

The behaviour's prevalence raises significant public health concerns. Studies show that most teenagers report being "almost constantly online"⁶, creating an environment where attention is increasingly fragmented. This extensive usage can lead to various negative outcomes, including mental distraction, degraded social interaction, and potential mental health issues such as anxiety and depression⁷.

Social media platforms employ sophisticated algorithms and design features that capitalize on basic psychological principles to maintain user engagement. These include suggestions, auto-play, pull-to-refresh, infinite scrolling, and social investment mechanisms⁸. The integration of short-form video content has been particularly effective at triggering psychological patterns that keep users in a continuous scrolling loop⁹.

The neurobiological basis involves small doses of dopamine released with each scrolling motion, coupled with variable reward schedules, which can lead to tolerance development¹⁰. This mechanism mirrors the reward uncertainty that makes many behavioural patterns compelling and potentially habit-forming.

Recent research has explored potential solutions. Studies have demonstrated the effectiveness of ethical nudging interventions in minimizing time spent on social media and encouraging mindfulness practices¹¹. Practical interventions, such as browser extensions that make social media less compelling and implementing "news feed diets," have shown promise in reducing compulsive scrolling behaviour¹².

Healthcare providers need to recognize dopamine-scrolling as distinct from other digital behaviours while developing appropriate screening tools and interventions. Educational institutions must develop digital literacy programs that address this behaviour, helping students understand the mechanisms underlying their social media use while developing strategies for maintaining healthy digital boundaries¹³.

Platform developers and policymakers should consider implementing evidence-based interventions that recognize the particularly vulnerable nature of younger users. Recent policy developments, such as the European Union's efforts to address digital addiction, represent important steps toward creating protective frameworks¹⁴.

The way forward requires a multi-stakeholder approach. This includes:

* Development of valid measurement tools for assessing problematic scrolling behaviour
* Implementation of platform-level features promoting mindful engagement
* Creation of evidence-based educational interventions
* Establishment of clear regulatory frameworks protecting vulnerable users

As we continue navigating an increasingly digital world, understanding and addressing dopamine-scrolling behaviour becomes crucial for public health. The ongoing evolution of social media platforms suggests this behavioural pattern will likely persist and transform, making it essential to develop effective responses that balance the benefits of digital engagement with the need to protect individual and societal wellbeing¹⁵.

**References**

1. Anderson IA, Wood W. Habits and the electronic herd: The psychology behind social media's successes and failures. Consum Psychol Rev. 2020;4:83-99.
2. Purohit AK, Holzer A. Unhooked by Design: Scrolling Mindfully on Social Media by Automating Digital Nudges. AMCIS. 2021;21:1-10.
3. GlobalWebIndex. Flagship Report 2019. 2019.
4. Weinstein A, Feder LC, Rosenberg KP, Dannon P. Internet addiction disorder: Overview and controversies. In: Behavioral addictions. 2014. p. 99-117.
5. Rajeshwari S, Meenakshi S. The age of doom scrolling–Social media's attractive addiction. J Educ Health Promot. 2023;12(1):21.
6. Vogels EA, Gelles-Watnick R, Massarat N. Teens, social media and technology 2022. Pew Research Center. 2022. Available from: https://www.pewresearch.org/internet/2022/08/10/teens-social-media-and-technology-2022/
7. Boer M, Stevens GWJM, Finkenauer C, de Looze ME, van den Eijnden RJJM. Social media use intensity, social media use problems, and mental health among adolescents: Investigating directionality and mediating processes. Comput Human Behav. 2021;116:106645.
8. Roffarello AM, De Russis L. Towards understanding the dark patterns that steal our attention. In: CHI Conference on Human Factors in Computing Systems Extended Abstracts; 2022; New Orleans, LA. p. 1-7.
9. Rixen, J. O., Meinhardt, L. M., Glöckler, M., Ziegenbein, M. L., Schlothauer, A., Colley, M., ... & Gugenheimer, J. The Loop and Reasons to Break It: Investigating Infinite Scrolling Behaviour in Social Media Applications and Reasons to Stop. Proceedings of the ACM on Human-Computer Interaction. 2023; 7:1-22.
10. Wood W, Rünger D. Psychology of habit. Annu Rev Psychol. 2016;67:289-314.
11. Purohit AK, Holzer A. Unhooked by Design: Scrolling Mindfully on Social Media by Automating Digital Nudges. AMCIS. 2021;21:1-10.
12. Purohit AK, Bergram K, Barclay L, Bezençon V, Holzer A. Starving the Newsfeed for Social Media Detox: Effects of Strict and Self-regulated Facebook Newsfeed Diets. In: Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems; 2023; Hamburg, Germany. p. 1-16.
13. Adams AT, Costa J, Jung MF, Choudhury T. Mindless computing: Designing technologies to subtly influence behavior. In: Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing; 2015; Osaka, Japan. p. 719-30.
14. European Parliament. New EU rules needed to address digital addiction. 2023 Dec 12. Available from: <https://www.europarl.europa.eu/news/en/press-room/20231208IPR15767/new-eu-rules-needed-to-address-digital-addiction>
15. Montag C, Lachmann B, Herrlich M, Zweig K. Addictive features of social media/messenger platforms and freemium games against the background of psychological and economic theories. Int J Environ Res Public Health. 2019;16(14):2612.