

## ***Virtual Boundaries: Ethical Approaches to Mitigating Risks of Adolescent Social Media Use***

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### **Abstract**

Social media use has increased throughout the past decade, leading to growing concerns about its impact on the mental, emotional, and physical health of youth. Children and young adults use TikTok, Snapchat, and Instagram widely, often without any age verification or safeguards in place. This paper examines the ethical implications of youth social media use by applying Beauchamp and Childress's four bioethical principles: autonomy, beneficence, non-maleficence, and justice. While there are many beneficial aspects of screen use (e.g., facilitating creativity, self-expression, connection, and education), some platforms are intentionally designed to be highly addictive, easily accessible, and algorithmically driven, exploiting the developmental vulnerabilities of youth. This paper explores the disproportionate risks faced by youth and the ethical failures of digital platforms to protect them. Evidence from recent intervention studies and emerging policy measures in the United States demonstrate that school-based programs, parental regulation, and state-level legislation can help to mitigate excessive social media use and its coinciding harms. This analysis underscores the ethical responsibility of parents, educators, policy makers, and technology companies to balance adolescent autonomy with prevention of harm, promoting well-being, and ensuring justice for youth in digital spaces.

Keywords: Adolescent Mental Health, Social Media, Screen Time, Bioethics, Digital Technology

### **Introduction**

Over the past decade, digital technology has become embedded in the daily lives of children and adolescents. This has changed how they learn, communicate, and spend their time.<sup>1</sup> As access to digital devices has expanded, overall screen time among younger people has increased. Although digital technology may support learning and social connection, there is growing concern about its potential effects on physical health, cognitive development, and psycho-

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<sup>1</sup> Teague, S., Somoray, K., Shatte, A., Miller, D., Moss, K., Crawford, A., Wildman, H., Kayal, D., & Hutchinson, D. (2026). Digital Media Use and child health and development. *JAMA Pediatrics*, 180(5), 510. <https://doi.org/10.1001/jamapediatrics.2026.0085>

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logical well-being among youth. These concerns have led to greater attention from researchers, clinicians, and policymakers, who want to better understand how digital technology may influence child and adolescent development.

Screen time is often discussed in terms of total duration (i.e., hours); however, the context, content, and type of use may be more important than time.<sup>2</sup> Screen-based activities can range from passive consumption (e.g., watching videos) to more interactive engagement (e.g., video gaming). The differences in engagement have been associated with different cognitive, emotional, and behavioral effects.<sup>3</sup> For example, using a screen for educational purposes may support learning and social development, whereas other forms of use may be associated with sedentary behavior, disruption of sleep, or poor mental health.<sup>4</sup>

The focus here is social media, which has become an increasingly prominent aspect of the lives of child and adolescent populations, with evidence suggesting detrimental effects on wellbeing for many young people.<sup>5</sup> Since the emergence of contemporary social media in the early 2000s (e.g., Myspace, Tumblr, Facebook, Instagram, Snapchat, TikTok), social media has expanded from exclusively desktop technology to constant accessibility in the palm of your hand. While social media continues to achieve its purpose of connecting individuals and facilitating relationships, it has also had harmful effects on our most vulnerable people.<sup>6</sup> In 2026, social media platforms are riddled with children's accounts; almost 40 percent of children aged 8-12 have one.<sup>7</sup>

This brief paper is intended as a dialogue starter for parents, school administrators, healthcare providers, and public health professionals. The authors discuss the bioethical considerations of pediatric social media usage and potential recommendations for prevention and intervention efforts.

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<sup>2</sup> Kim, S., Favotto, L., Halladay, J., Wang, L., Boyle, M. H., & Georgiades, K. (2020). Differential associations between passive and active forms of screen time and adolescent mood and anxiety disorders. *Social Psychiatry and Psychiatric Epidemiology*, 55(11), 1469–1478. <https://doi.org/10.1007/s00127-020-01833-9>; Marin-Dragu, S., Forbes, A., Sheikh, S., Iyer, R. S., Pereira dos Santos, D., Alda, M., Hajek, T., Uher, R., Wozney, L., Paulovich, F. V., Campbell, L. A., Yakovenko, I., Stewart, S. H., Corkum, P., Bagnell, A., Orji, R., & Meier, S. (2023). Associations of active and passive smartphone use with measures of youth mental health during the COVID-19 pandemic. *Psychiatry Research*, 326, Article 115298. <https://doi.org/10.1016/j.psychres.2023.115298>

<sup>3</sup> Kim, S., Favotto, L., Halladay, J., Wang, L., Boyle, M. H., & Georgiades, K. (2020). Differential associations between passive and active forms of screen time and adolescent mood and anxiety disorders. *Social Psychiatry and Psychiatric Epidemiology*, 55(11), 1469–1478. <https://doi.org/10.1007/s00127-020-01833-9>; Marin-Dragu, S., Forbes, A., Sheikh, S., Iyer, R. S., Pereira dos Santos, D., Alda, M., Hajek, T., Uher, R., Wozney, L., Paulovich, F. V., Campbell, L. A., Yakovenko, I., Stewart, S. H., Corkum, P., Bagnell, A., Orji, R., & Meier, S. (2023). Associations of active and passive smartphone use with measures of youth mental health during the COVID-19 pandemic. *Psychiatry Research*, 326, Article 115298. <https://doi.org/10.1016/j.psychres.2023.115298>

<sup>4</sup> Odgers, C. L., & Jensen, M. R. (2020). Annual research review: Adolescent mental health in the digital age: Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, 61(3), 336–348. <https://doi.org/10.1111/jcpp.13190>

<sup>5</sup> Twenge, J. M., Haidt, J., Joiner, T. E., & Campbell, W. K. (2020). Underestimating Digital Media Harm Nature human behaviour, 4(4), 346–348. <https://doi.org/10.1038/s41562-020-0839-4>

<sup>6</sup> Vidal, C., & Katzenstein, J. M. (2024, September 25). Social Media and Mental Health in children and teens. *Johns Hopkins Medicine*. <https://www.hopkinsmedicine.org/health/wellness-and-prevention/social-mediaand-mental-health-in-children-and-teens>

<sup>7</sup> New America. (2023). Social media platforms and age-appropriate practices. <https://www.newamerica.org/oti/reports/age-verification-the-complicated-effort-to-protect-youthonline/social-media-platforms-and-age-appropriate-practices/>

## Background

Mental health experts are concerned about social media's impact on pediatric populations. Adolescents are particularly vulnerable given that their brains are still developing – specifically the prefrontal cortex, the area governing judgment, impulse control, and risk.<sup>8</sup> At the same time, social media environments are intentionally designed to be habit-forming, using features such as algorithm-tailored content to captivate individuals.<sup>9</sup>

Research increasingly shows the negative effects of excessive social media use, such as heightened anxiety, depression, and low self-esteem.<sup>10</sup> In addition, using social media causes dopamine releases, a biochemical process in the brain which reinforces reward-seeking behavior and can foster addictive patterns, thus making children who are more susceptible to addiction become dependent on social media.<sup>11</sup> Moreover, the intentionally addictive design of these platforms, which includes endless scrolling, personalized content algorithms, and constant notifications, detracts from face-to-face social interaction, sleep, and exercise, further compromising emotional development.<sup>12</sup> Social media exploits adolescent sensitivity to validation and social reward through features that maximize engagement rather than well-being,<sup>13</sup>

The short-term effects include harm to the mental health of many adolescents using these platforms.<sup>14</sup> Social media use has been associated with both witnessing and directly experiencing bullying, as well as exposure to harmful content.<sup>15</sup> The reward systems (likes, comments, shares, and attention from others/going viral) incentivize users to seek validation and many fear judgment or being canceled.<sup>16</sup> Additionally, social media can lead to negative body image

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<sup>8</sup> De, D., El Jamal, M., Aydemir, E., & Khera, A. (2025). Social media algorithms and teen addiction: Neurophysiological impact and ethical considerations. *Cureus*, 17(1), e77145. <https://doi.org/10.7759/cureus.77145>

<sup>9</sup> De, D., El Jamal, M., Aydemir, E., & Khera, A. (2025). Social media algorithms and teen addiction: Neurophysiological impact and ethical considerations. *Cureus*, 17(1), e77145. <https://doi.org/10.7759/cureus.77145>

<sup>10</sup> Chao, M., Lei, J., He, R., Jiang, Y., & Yang, H. (2023). TikTok use and psychosocial factors among adolescents. *Psychiatry Research*, 325, 115247. <https://doi.org/10.1016/j.psychres.2023.115247>

<sup>11</sup> Chao, M., Lei, J., He, R., Jiang, Y., & Yang, H. (2023). TikTok use and psychosocial factors among adolescents. *Psychiatry Research*, 325, 115247. <https://doi.org/10.1016/j.psychres.2023.115247>

<sup>12</sup> Amirthalingam, J., & Khera, A. (2024). Understanding Social Media Addiction: A Deep Dive. *Cureus*, 16(10), e72499. <https://doi.org/10.7759/cureus.72499>

<sup>13</sup> Rosenberg K. (2023). Adolescents' Social Media Use May Affect Functional Brain Development. *The American journal of nursing*, 123(4), 54. <https://doi.org/10.1097/01.NAJ.0000925512.33439.8c>

<sup>14</sup> Popat, A., & Tarrant, C. (2023). Exploring adolescents' perspectives on social media and mental health and well-being: A qualitative literature review. *Clinical Child Psychology and Psychiatry*, 28(1), 323–337. <https://doi.org/10.1177/13591045221092884>

<sup>15</sup> Skogen, J. C., Andersen, A. I., Finserås, T. R., Ranganath, P., Brunborg, G. S., & Hjetland, G. J. (2023). Commonly reported negative experiences on social media are associated with poor mental health and wellbeing among adolescents: Results from the "LifeOnSoMe"-Study. *Frontiers in Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1192788>

<sup>16</sup> Lindström, B., Bellander, M., Schultner, D. T., Chang, A., Tobler, P. N., & Amodio, D. M. (2021a). A computational reward learning account of social media engagement. *Nature Communications*, 12(1). <https://doi.org/10.1038/s41467-020-19607-x>

and excessive body comparisons.<sup>17</sup> Allowing children and adolescents, who lack emotional and cognitive maturity to navigate these platforms responsibly, onto these platforms raises ethical questions regarding their safety and well-being.

### **Ethical Analysis**

Beauchamp and Childress's four bioethical principles provide a useful framework for evaluating adolescent screen use. When applied, these principles may not carry equal weight and require careful prioritization to prevent harm with respect for adolescent autonomy.

#### **I. Autonomy**

Autonomy is particularly important to adolescent social media use. Using autonomy to justify adolescent access to social media would require adolescents to fully appreciate the risks. On the surface, young people exercise autonomy in deciding how they present themselves online, what content they engage with, and how they interact with others. However, adolescents do not yet have the neurocognitive maturity to make fully informed choices. Experts have suggested that adolescents should be barred from social media use until their brains can adjust, around the age of 16.<sup>18</sup> Social media platforms give adolescents an illusion of autonomy and control but can exploit their vulnerabilities and risk damaging their mental health and development. Autonomy requires more than choice: it depends on one's ability to make informed and voluntary decisions. When social media platforms are designed to sustain engagement through algorithmic reinforcement and continuous content exposure, they influence adolescent decision-making in ways that compromise self-governance. Autonomy is an insufficient justification for social media use because adolescents may not be developmentally equipped to fully appreciate its risks and because platform design can exploit vulnerabilities related to reward seeking behavior, impulse control, bullying, and exposure to harmful content.

#### **II. Beneficence**

The second principle, beneficence, emphasizes actions that promote well-being and benefit others. There are several positive aspects of social media that align with this principle. For adolescents, it can aid in fostering social connections, supporting creative expression through digital media, and providing educational resources.<sup>19</sup> For example, platforms such as YouTube, TikTok, and Instagram can host educational videos, tutorials, and informational content that may facilitate learning.<sup>20</sup> When used mindfully, social media can enhance learning opportunities, encourage social engagement, and facilitate education. During the COVID-19 pandemic, the younger generation relied on digital technology

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<sup>17</sup> de Valle, M. K., Gallego-García, M., Williamson, P., & Wade, T. D. (2021). Social media, body image, and the question of causation: Meta-analyses of experimental and longitudinal evidence. *Body Image*, 39, 276–292. <https://doi.org/10.1016/j.bodyim.2021.10.001>

<sup>18</sup> Purcell, F. (2024, December 14). Smartphones and social media 'toxic' for children under 14, psychologist Jonathan Haidt says. ABC News. <https://www.abc.net.au/news/2024-12-15/conversations-smartphonessocial-media-toxic-for-childhood/104673052>

<sup>19</sup> Beauchamp, T. L., & Childress, J. F. (2019). *Principles of biomedical ethics* (8th ed.). Oxford University Press.

<sup>20</sup> Nagata, Jason M., et al. "Health Benefits of Social Media Use in Adolescents and Young Adults." *Current Pediatrics Reports (Philadelphia, PA)* [New York], vol. 13, no. 1, no. 22, August 2025, <https://doi.org/10.1007/s40124-025-00357-7>.

to attend school, connect with friends, and stay in touch with family.<sup>21</sup> These benefits demonstrate that digital media can play an important role in adolescent development and well-being.

However, the presence of potential benefits does not eliminate the ethical obligation to consider whether these outcomes can be achieved without exposing adolescents to harm. With the appropriate safeguards, such as restricting downloads and including age requirements and parental controls, social media use in adolescents may promote well-being rather than hinder it; however, such measures have yet to be successfully added and enforced on a large scale. Therefore, beneficence supports a balanced approach: preserving the potential benefits of adolescent social media use while implementing safeguards to reduce preventable risks. Ultimately, beneficence must be weighed against non-maleficence, the principle of avoiding harm.

### III. Non-Maleficence

Applying non-maleficence to social media requires examination of its negative impact on adolescents.<sup>22</sup> Many risks, such as sleep disruption, cyberbullying, social comparison, and exposure to harmful content, may be intensified by platform designs that keep users engaged.<sup>23</sup> Technology companies use algorithm recommendations, autoplay, and push notifications to reduce natural stopping cues and encourage prolonged use.<sup>24</sup> This causes individuals to unintentionally spend hours scrolling and lose valuable sleep. Additionally, curated and idealized images on social media often foster self-consciousness and poor self-esteem among young users.<sup>25</sup> The lack of age-appropriate restrictions and barriers exacerbates the harm. Importantly, many of these harms are foreseeable consequences of platform design. Given that adolescents are vulnerable to these mechanisms due to ongoing neurodevelopment, continued exposure without appropriate safeguards raises ethical concerns. When harm is predictable and preventable, non-maleficence may take precedence over autonomy in protecting adolescent populations.

### IV. Justice

The fourth principle, justice, includes distributive justice, which refers to the fair distribution of benefits, burdens, and resources. Justice is complex in that it could justify access to social media as well as safeguards. It prompts us to consider who has access to safe platforms, who is at risk, and whether vulnerable groups are unfairly targeted or excluded. While companies profit from sustained user engagement, adolescents disproportionately bear the psycho-

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<sup>21</sup> Rimel, S. E., Bam, D., Farren, L., Thaanum, A., Smith, A., Park, S. Y., Boeldt, D. L., & Nicksic Sigmon, C. A. (2023). Technology use during the COVID-19 pandemic and the ways in which technology can support adolescent well-being: Qualitative exploratory study. *JMIR Formative Research*, 7. <https://doi.org/10.2196/41694>

<sup>22</sup> Beauchamp, T. L., & Childress, J. F. (2019). *Principles of biomedical ethics* (8th ed.). Oxford University Press.

<sup>23</sup> Ahmed, O., Walsh, E. I., Dawel, A., Alateeq, K., Espinoza Oyarce, D. A., & Cherbuin, N. (2024). Social media use, mental health and sleep: A systematic review with meta-analyses. *Journal of Affective Disorders*, 367, 701–712. <https://doi.org/10.1016/j.jad.2024.08.193> Skogen, J. C., Andersen, A. I., Finserås, T. R., Ranganath, P., Brunborg, G. S., & Hjetland, G. J. (2023). Commonly reported negative experiences on social media are associated with poor mental health and wellbeing among adolescents: Results from the “LifeOnSoMe”-Study. *Frontiers in Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1192788>

<sup>24</sup> U.S. Department of Health and Human Services. (2023). *Social media and youth mental health: The U.S. Surgeon General's advisory*. Office of the Surgeon General. <https://www.hhs.gov/surgeongeneral/reports-and-publications/youth-mental-health/social-media/index.html>

<sup>25</sup> Fardouly, J., Diedrichs, P. C., Vartanian, L. R., & Halliwell, E. (2015). Social comparisons on social media: The impact of Facebook on young women's body image concerns and mood. *Body Image*, 13, 38–45. <https://doi.org/10.1016/j.bodyim.2014.12.002>

logical and social risks. Furthermore, adolescents from lower-income or marginalized communities often face a digital divide, not only in access to high-quality connectivity and devices but also in the quality and safety of their digital experiences. While arguably less access to social media protects users from the harms of overuse, when they do use social media, Black, Hispanic, LGBT, and Asian social media users are more likely to face harassment on social media than their counterparts.<sup>26</sup> Associations between social media use and depression appear stronger in early adolescence and among girls, who are more likely to engage in feedback-seeking and appearance-based social comparison on visual platforms. This suggests that the risks of social media use are not equally distributed across populations.

Justice requires ensuring that access, which arguably should be expanded to resolve the digital divide, is accompanied by safeguards. High-quality content and access to educational opportunities should be widely available and safeguards must prevent exploitation of vulnerable populations.<sup>27</sup> Moreover, justice may be achieved using universal design, defined as the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.<sup>28</sup> Applied to social media, this would mean designing platforms that are accessible and beneficial across differences in ability, socioeconomic status, and developmental stage through reducing complexity, presenting information through multiple modalities, and embedding safety features as defaults rather than opt-in additions.<sup>29</sup> This approach aligns with the American Academy of Pediatrics' recommendation for child-centered, safety-by-default design that prioritizes health and well-being over engagement-driven metrics.<sup>30</sup>

### Reconciling the Four Principles

Adolescent social media use presents a complex ethical conflict as the four principles require more than a simple evaluation. While autonomy speaks to a right to make the decision to use social media and beneficence may support adolescents' ability to engage with digital media for social connection, education, and self-expression, neither justifies unfettered use without safeguards. These considerations need to be balanced against the harms associated with use. Due to adolescents' developmental vulnerability and the manipulative design of many digital platforms, the principles of non-maleficence and justice may warrant greater priority than autonomy in this context. Applying the four principles, access to social media should be subject to safeguards currently not in place in most jurisdictions. We recommend policies that may better balance adolescent autonomy with the obligation to prevent harm.

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<sup>26</sup> Anti-Defamation League. (2024). Online hate and harassment: The American experience 2024 (Report). <https://www.adl.org/resources/report/online-hate-and-harassment-american-experience-2024>

<sup>27</sup> Munzer, T., Parga-Belinkie, J., Milkovich, L. M., Tomopoulos, S., Ajumobi, T., Cross, C., Gerwin, R., Madigan, S., Psych, R., Radesky, J., Evans, Y., Cahan, E., Milkovich, E., Bracho-Sanchez, E., Parga-Belinkie, J., Munzer, T., Espinoza, J., Husain, A., Patel, A., & Shapiro, I. (2026). Digital Ecosystems, children, and adolescents: Policy statement. *Pediatrics*, 157(2). <https://doi.org/10.1542/peds.2025-075320>

<sup>28</sup> Blanck, P. (2014, February 10). The Struggle for Web eQuality by Persons with Cognitive Disabilities. *Behavioral Sciences & the Law*. <https://onlinelibrary.wiley.com/doi/10.1002/bsl.2101>

<sup>29</sup> Henni, S. H., Maurud, S., Fuglerud, K. S., & Moen, A. (2022, January 6). The experiences, needs and barriers of people with impairments related to usability and accessibility of digital health solutions, levels of involvement in the design process and strategies for participatory and Universal Design: A scoping review. *BMC public health*. <https://pubmed.ncbi.nlm.nih.gov/34991540/>

<sup>30</sup> Munzer, T., Parga-Belinkie, J., Milkovich, L. M., Tomopoulos, S., Ajumobi, T., Cross, C., Gerwin, R., Madigan, S., Psych, R., Radesky, J., Evans, Y., Cahan, E., Milkovich, E., Bracho-Sanchez, E., Parga-Belinkie, J., Munzer, T., Espinoza, J., Husain, A., Patel, A., & Shapiro, I. (2026). Digital Ecosystems, children, and adolescents: Policy statement. *Pediatrics*, 157(2). <https://doi.org/10.1542/peds.2025-075320>

### Counterargument: Potential Benefits of Adolescent Social Media Use

While the ethical concerns are meaningful, it is important to acknowledge that digital technology may promote youth well-being. For example, digital platforms can facilitate social connection (i.e., peers, family), provide educational resources, and support creativity and self-expression.<sup>31</sup> More specifically, social media may offer opportunities for adolescents to maintain relationships and engage with online communities. This sense of community is important for adolescents who may lack support in their immediate environment. Further, the online space may promote a sense of belonging for those who are socially isolated or part of marginalized groups.<sup>32</sup> Digital technology played an important role during the Covid-19 pandemic, allowing youth to attend school, maintain social relationships, and access essential information.<sup>33</sup> The effect of social media depends on how it is structured and managed. When used in moderation and supported by safeguards (e.g., parental guidance, usage limits), social media may contribute positively to adolescent development. Therefore, the ethical concern is not whether social media can benefit adolescents, but whether those benefits can be provided in ways that minimize foreseeable and preventable harm.

### Counterargument: Methodological Limitations, Small Effect Sizes, and Other Risk Factors

In addition to potential benefits, it is important to consider methodological shortcomings and alternative explanations in the literature about adolescent social media and mental health. Longitudinal studies have found that social media use was associated with small but consistent adverse outcomes, including higher depression, internalizing and externalizing behaviors, self-injurious thoughts, substance use, and lower self-perception and academic achievement.<sup>34</sup> Research has also demonstrated that adolescents who spent more than three hours per day on social media had a significantly increased risk of internalizing problems, even after adjusting for prior mental health history.<sup>35</sup> However, the question of causation remains unresolved. A 2024 consensus report by the US National Academies of Sciences, Engineering, and Medicine concluded that the evidence did not support social media as a cause for change in adolescent health at the population level.<sup>36</sup> Much of the literature has also measured social media use as a single construct

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<sup>31</sup> Twenge, J. M., & Farley, E. (2021). Not all screen time is created equal: associations with mental health vary by activity and gender. *Social Psychiatry and Psychiatric Epidemiology*, 56(2), 207–217. <https://doi.org/10.1007/s00127-020-01906-9>; Teague, S., Somoray, K., Shatte, A., Miller, D., Moss, K., Crawford, A., Wildman, H., Kayal, D., & Hutchinson, D. (2026). Digital Media Use and child health and development. *JAMA Pediatrics*, 180(5), 510. <https://doi.org/10.1001/jamapediatrics.2026.0085>

<sup>32</sup> Lucassen, M., Samra, R., Iacovides, I., Fleming, T., Shepherd, M., Stasiak, K., & Wallace, L. (2018). How LGBT+ Young People Use the Internet in Relation to Their Mental Health and Envisage the Use of e-Therapy: Exploratory Study. *JMIR Serious Games*, 6(4), e11249. <https://doi.org/10.2196/11249>

<sup>33</sup> Rimel, S. E., Bam, D., Farren, L., Thaanum, A., Smith, A., Park, S. Y., Boeldt, D. L., & Nicksic Sigmon, C. A. (2023). Technology use during the COVID-19 pandemic and the ways in which technology can support adolescent well-being: Qualitative exploratory study. *JMIR Formative Research*, 7. <https://doi.org/10.2196/41694>

<sup>34</sup> Teague, S., Somoray, K., Shatte, A., Miller, D., Moss, K., Crawford, A., Wildman, H., Kayal, D., & Hutchinson, D. (2026). Digital Media Use and Child Health and Development: A Systematic Review and Meta-Analysis. *JAMA Pediatrics*, 180(5), 510–517. <https://doi.org/10.1001/jamapediatrics.2026.0085>

<sup>35</sup> Riehm, K. E., Feder, K. A., Tormohlen, K. N., Crum, R. M., Young, A. S., Green, K. M., Patek, L. R., Flair, L. N. L., & Mojtabai, R. (2019, December 1). Associations Between Time Spent Using Social Media and Internalizing and Externalizing Problems Among US Youth. *JAMA psychiatry*. <https://pubmed.ncbi.nlm.nih.gov/31509167/>

<sup>36</sup> Teague, S., Somoray, K., Shatte, A., Miller, D., Moss, K., Crawford, A., Wildman, H., Kayal, D., & Hutchinson, D. (2026). Digital Media Use and child health and development. *JAMA Pediatrics*, 180(5), 510. <https://doi.org/10.1001/jamapediatrics.2026.0085>

without distinguishing between content, context, or function (e.g., passive scrolling versus active communication, exposure to harmful content versus supportive interaction).<sup>37</sup> Unmeasured variables, including sleep disruption, family environment, socioeconomic status, and preexisting mental health vulnerabilities may confound observed associations.<sup>38</sup>

Systematic reviews exploring adolescent screen time have also pointed out how most studies are correlational and cannot determine directionality.<sup>39</sup> Therefore, it is important to consider that mental health problems may result in increased screen time, rather than vice versa. Additionally, longitudinal studies examining bidirectional associations of technology use in adolescence found that depressive symptoms predicted higher subsequent social media use,<sup>40</sup> and also that social media use predicted higher later depression symptoms.<sup>41</sup> It is possible that youth with existing difficulties may be seeking out screens as a coping mechanism, complicating the argument about the association of screens leading to increased mental health difficulties.

### **Practical Strategies for Reducing Risky Adolescent Screen Use**

Preliminary programs and policy efforts related to curbing unhealthy adolescent relationships with technology have provided early evidence that prevention and intervention can reduce excessive social media use among adolescents. Multiple school-based interventions have shown moderate reductions in screen time use. For example, randomized controlled trials of a screen time reduction curriculum in schools that combined lessons with changes to after-school environments reported roughly a 30 minute per day reduction in screen use among adolescents.<sup>42</sup> In addition, a 2025 meta-analysis of 34 school-based interventions found that these programs were particularly effective in reducing problematic digital technology use — a broad category that includes smartphone, internet, gaming, and social media-

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<sup>37</sup> Saleem, N., Young, P., & Yousuf, S. (2024, November 27). Exploring the relationship between social media use and symptoms of depression and anxiety among children and adolescents: A systematic narrative review. *Cyberpsychology, Behavior and Social Networking*. <https://pubmed.ncbi.nlm.nih.gov/39446668/>

<sup>38</sup> Maheux, A. J., Burnell, K., Maza, M. T., Fox, K. A., Telzer, E. H., & Prinstein, M. J. (2024, December 23). Annual research review: Adolescent social media use is not a monolith: Toward the study of specific social media components and individual differences. *Journal of child psychology and psychiatry, and allied disciplines*. <https://pubmed.ncbi.nlm.nih.gov/39711214/>

<sup>39</sup> Eirich, R., McArthur, B. A., Anhorn, C., McGuinness, C., Christakis, D. A., & Madigan, S. (2022). Association of Screen Time with Internalizing and Externalizing Behavior Problems in Children 12 Years or Younger. *JAMA Psychiatry*, 79(5). <https://doi.org/10.1001/jamapsychiatry.2022.0155>

<sup>40</sup> Puukko, K., Hietajärvi, L., Maksniemi, E., Alho, K., & Salmela-Aro, K. (2020). Social Media Use and Depressive Symptoms—A Longitudinal Study from Early to Late Adolescence. *International Journal of Environmental Research and Public Health*, 17(16), 5921. <https://doi.org/10.3390/ijerph17165921>; Houghton, S., Kyron, M., Lawrence, D., Hunter, S. C., Hattie, J., Carroll, A., Zadow, C., & Chen, W. (2022). Longitudinal trajectories of mental health and loneliness for Australian adolescents with-or-without neurodevelopmental disorders: the impact of COVID-19 school lockdowns. *Journal of Child Psychology and Psychiatry*, 63(11), 1332–1343. <https://doi.org/10.1111/jcpp.13579>

<sup>41</sup> Houghton, S., Kyron, M., Lawrence, D., Hunter, S. C., Hattie, J., Carroll, A., Zadow, C., & Chen, W. (2022). Longitudinal trajectories of mental health and loneliness for Australian adolescents with-or-without neurodevelopmental disorders: the impact of COVID-19 school lockdowns. *Journal of Child Psychology and Psychiatry*, 63(11), 1332–1343. <https://doi.org/10.1111/jcpp.13579>

<sup>42</sup> Robinson, T. N., Banda, J. A., Hale, L., Lu, A. S., Fleming-Milici, F., Calvert, S. L., ... & Wartella, E. (2013). Screen media exposure and obesity in children and adolescents. *Pediatrics*, 132(5), 1140–1151. <https://doi.org/10.1542/peds.2013-2140>

related problems — though they were less effective in reducing total screen time.<sup>43</sup> Interventions appear to shift the quality of engagement more than the quantity, reducing compulsive and addictive patterns rather than simply cutting minutes of use.<sup>44</sup> These studies indicate that structured related programs in schools — including classroom education, awareness campaigns, and environment modifications such as limiting screen-time and social media use in after-school programs, providing alternative activities, classroom screen-free challenges, and rewarding other forms of engagement — are feasible and yield significant results.

Beyond the school system, household rules and parental influence play a large role in reducing adolescent screen time routines. In the United States, survey studies show that adolescents whose parents set clear screen time limits report 1-2 fewer hours of recreational use compared to peers without any barriers.<sup>45</sup> Furthermore, another influential factor in screen time use is the age of a child's first smartphone ownership. For instance, a study examining the age in which an adolescent receives their first smartphone found that adolescents who received a phone at a later age reported lower risk of problematic use.<sup>46</sup> In addition, parental modeling plays an important role in adolescents developing a healthy relationship with screens; adolescents whose caregivers actively limit their own screen use and prioritize face-to-face interaction have been shown to develop healthier social media habits themselves.<sup>47</sup> A strong parent-child relationship also facilitates the enforcement of effective boundaries around technology use. Caregivers who focus on content quality, co-viewing, prioritizing healthy activities (e.g., sleep, physical activity, reading), and communication are more likely to have adolescents with better well-being and mental health outcomes than those who focus solely on duration of screen time.<sup>48</sup>

In terms of policy, recent laws have begun to require more substantive online protection for minors. In Australia, legislators have banned social media for users under 16 years old.<sup>49</sup> In Utah, the Social Media Regulation Act imposed

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<sup>43</sup> Žmavc, M., Horvat, J., Židan, M., & Selak, Š. (2025). *The effectiveness of school-based interventions to reduce problematic digital technology use and screen time: A systematic review and meta-analysis*. *Journal of Behavioral Addictions*, 14(2), 571–589. <https://doi.org/10.1556/2006.2025.00043>

<sup>44</sup> Žmavc, M. Ž., Horvat, J., Židan, M., & Selak, Š. (2025, June 23). The effectiveness of school-based interventions to reduce problematic digital technology use and Screen Time: A systematic review and metaanalysis. *Journal of Behavior Addictions*. <https://pubmed.ncbi.nlm.nih.gov/40549948/>

<sup>45</sup> Lauricella, A. R., Wartella, E., & Rideout, V. J. (2015). Young Children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology*, 36, 11–17. <https://doi.org/10.1016/j.appdev.2014.12.001>

<sup>46</sup> Twenge, J. M., & Martin, G. N. (2020). Gender differences in associations between digital media use and psychological well-being: Evidence from three large datasets. *Journal of Adolescence*, 79(1), 91–102. <https://doi.org/10.1016/j.adolescence.2019.12.018>

<sup>47</sup> Gentile, D. A., Reimer, R. A., Nathanson, A. I., Walsh, D. A., & Eisenmann, J. C. (2014). Protective effects of parental monitoring of children's media use. *JAMA Pediatrics*, 168(5), 479. <https://doi.org/10.1001/jamapediatrics.2014.146>

<sup>48</sup> Munzer, T., Milkovich, L. M., Madigan, S., Tomopoulos, S., Parga-Belinkie, J., Taiwo Ajumobi, Cross, C., Gerwin, R., Radesky, J., Evans, Y., Cahan, E., Milkovich, E., Bracho-Sanchez, E., Parga-Belinkie, J., Munzer, T., Espinoza, J., Husain, A., Patel, A., & Shapiro, I. (2026). Digital Ecosystems, Children, and Adolescents: Technical Report. *PEDIATRICS*, 157(2). <https://doi.org/10.1542/peds.2025-075321>

<sup>49</sup> Stankov, I., Tefera, Y., Bradley, M., Pickering, A., Willoughby, E., & Williams, C. (2025). A precautionary approach to social media: protecting young minds in an evolving digital world. *The Medical journal of Australia*, 223(5), 230–232. <https://doi.org/10.5694/mja2.52722>

age verification and restricted algorithmic recommendation systems for minors using social media.<sup>50</sup> However, enforcement of age requirements, given that sign-ups often rely on self-declared birthdates and minimal verification, represents a significant challenge.<sup>51</sup>

In addition, in California, the Protecting Our Kids from Social Media Act requires parental consent for addictive social media feeds, restricts notifications during night hours, and mandates default privacy settings for minors.<sup>52</sup> Furthermore, in New York, the SAFE for Kids Act requires parents to consent to exposure of algorithmically recommended content and restricts the collection or sale of children's data.<sup>53</sup> To address social media use in the school setting, New York State began implementing a "bell-to-bell" phone-free law for students in K-12 public and charter schools beginning in the 2025-26 school year. The law prohibits the use of smartphones and internet-enabled devices, such as smartwatches and tablets, during school hours, and requires that schools provide an alternative method for parents needing to contact their children during the day.<sup>54</sup>

Micro-level interventions in homes and schools as well as macro-level policy regulations can contribute to positive change. With robust financial support, school districts can implement long-term education programs, parent and student media literacy training, and digital wellness curricula.

## Conclusion

Not only do platforms give adolescents a false sense of control and autonomy, but they expose them to manipulative design features, unrealistic expectations, social comparison, and constant online validation, increasing the impact on their mental health and overall development. From a bioethical perspective, this raises serious concerns about harm, consent, and manipulation, as adolescents may lack cognitive maturity to recognize or resist these addictive design tactics.

Bioethics can inform interventions aimed at curbing excessive and unhealthy social media use among adolescents. Such interventions should balance respect for adolescent autonomy with protection of well-being. Schools should implement programs to improve digital literacy, awareness of persuasive technology, and healthy digital habits. Meanwhile, parents and caregivers could model mindful technology use and foster open communication, so children and adolescents feel comfortable discussing their online experiences, concerns, and overall emotional well-being. By grounding approaches in the four bioethical principles, educators, administrators, and public health program developers can collaborate to promote healthier relationships between adolescents and social media. Society must better

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<sup>50</sup> Utah State Legislature. (2023). S.B. 152: Social Media Regulation Amendments. <https://le.utah.gov/~2023/bills/static/SB0152.html>

<sup>51</sup> Hartley, C. A., & Somerville, L. H. (2015). The neuroscience of adolescent decision-making. *Current Opinion in Behavioral Sciences*, 5, 108–115. <https://doi.org/10.1016/j.cobeha.2015.09.004>

<sup>52</sup> California State Legislature. (2023). S.B. 976: Protecting Our Kids from Social Media Act. [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202320240SB976](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240SB976)

<sup>53</sup> New York State Legislature. (2023). A.B. A8148A: SAFE for Kids Act. [https://nyassembly.gov/leg/?default\\_fld=&leg\\_video=&bn=A08148&term=2023](https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A08148&term=2023)

<sup>54</sup> New York State. (n.d.). New York State Phone-Free Schools Law. <https://www.governor.ny.gov/eliminatingdistractions-new-york-schools/new-york-state-phone-free-schools-law>

realize the ethical obligations laid out under Beauchamp and Childress' principles: protecting adolescents from harm they cannot fully comprehend or resist.