

Digital Dilemma: Longitudinal Associations Between Social Media Engagement and Adolescent Mental Health Outcomes

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Abstract

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The present article focuses on the longitudinal findings on the relationships between the use of social media and their mental health outcomes in adolescents. The spread of social media sites has inherently changed how adolescents socialize fundamentally, offering both advantages in terms of bonding and dangers to mental health. The article synthesizes the existing evidence on the dynamics of these relationships over time, based on prospective cohort research, systematic reviews and meta-analyses published between 2016 and 2025. The results indicate the existence of complex, reciprocal relationships in which the use of social media is a predictor of further mental illness, and existing vulnerability conditions also determine trends in the use of digital media. These associations are mediated by different platforms, patterns of use and personal characteristics. Although the most recent findings of heavy social media use consistently demonstrate similarities in heightened depressive symptoms and psychological distress effects as time goes by, the extent of effect is also relatively small and differs significantly across literature. This review summarizes by offering advice to parents, educators, policymakers, and future research leads in order to overcome the digital dilemmas encountered by the modern youth.

Keywords: social media, adolescents, mental health, longitudinal, depression, and anxiety, screen time, and digital wellbeing.

1. Introduction

The online teenage environment has gone through a tectonic change in the last ten years. The modern generation lives in a world where social connection, trying out identities and social comparison takes place more with digital interfaces. Instagram, Snapchat, Tik Tok and Facebook have become the part of the social life of teenagers, and more than 90 percent of teenagers claim to use social media on a regular basis. However, this virtual reality has elicited a raging controversy amongst researchers, clinicians, educators, and parents over its psychological effects.

The issue of the detrimental effect of social media use on adolescent mental health has produced a great amount of empirical research and societal interest. Claims made with high profile and connecting social media to increasing incidences of adolescent depression and anxiety led to a call to intervene with regulators, and some argue of technological moral panic that could obscure more finer details. It is important to go beyond cross-sectional correlations to study longitudinal trends that can help to clarify the importance of temporal precedence and developmental patterns to get a clear picture of all these associations.

The current review narrows down to longitudinal findings of the relationship between social media use and mental health outcomes in adolescents. The purpose of the article is to offer an evidence-based comprehensive evaluation of the relationship between social media use and psychological wellbeing in the long term through the synthesis of the results of prospective cohort studies and systematic reviews. The time layer is important: longitudinal designs enable the researcher to understand whether the use of social media is a predicting factor of later mental health issues, whether underlying vulnerabilities are the cause of a heightened consumption of social media, or whether these relationships are reciprocal.

The vested interests of this investigation are high. Adolescence is a critical developmental stage with an increased level of neuroplasticity, identity development, and social evaluation sensitivity. In case the media involvement methodically threatens the mental well-being during this critical period, population health-related actions can be justified. On the other hand, when the associations are minor, imprecise, or only

apply to particular subgroups, the resources may be redirected to other factors that determine the wellbeing of an adolescent.

2. Literature Review

The analysis of the impact of digital media on the development of adolescents has developed a lot in the last 20 years. Initial studies were mainly concerned with cross-sectional relationships between screen time and psychological outcomes, in which media use is theorized as an equivalent exposure that has similar effects on individuals. This strategy has been popular in the literature over the years and has created a great deal of anxiety about the concept of screen time as a single uniform threat to the mental health of adolescents.

The shortcomings of this strategy were further evidenced by studies that reported a high level of heterogeneity in the effects of media when it comes to individuals, platforms, and contexts. The understanding of the two-way and platform-specific and one-on-one-characterized nature of the impacts of social media was a paradigm shift. The modern literature leans more and more towards the careful theoretical frameworks that would not conflate the various forms of digital behavior, would investigate how it and vice versa would have an impact over time, and would mark the vulnerable subpopulations.

The second topic to address is the post-Pandemic Patterns of Digital Engagement

The COVID-19 pandemic was an act of natural experimentation in terms of saturation in the digital media, and adolescents globally have undergone the most screen-based form of social interaction in relation to physical distancing. Although the evidence sources reviewed in this paper are longitudinal and date back to the time before and during the pandemic, it is important to note that the key relationships between social media and mental health were formed years prior to the crisis, which suggests the presence of deep-seated developmental dynamics, as opposed to effects of the pandemic situation.

Scholarly studies of the pandemic reported improved digital interactions and high-level mental health stress among teenagers. Nevertheless, it is methodologically difficult to separate pandemic-specific stressors and the impact of digital media. The longitudinal research that has been synthesized in this review is the important evidence of the

temporal precedence and development trajectories that go beyond the acute crisis periods.

3. Conceptual Framework

3.1 Digital Media Effects Theoretical Models

To determine longitudinal relationships between social media and mental health, it is necessary to base it on theoretical frameworks that define the mechanisms of influence. There are a number of complementary frameworks that guide current research.

The hypothesis of displacement suggests that the time spent on social media replaces such activities that are fundamental to healthy development as face-to-face communication, exercise, and rest. In this regard, what is wrong with social media is not its content but what it substitutes. Gunnell et al. (2016) examined bidirectional relationships between physical activity, screen time, and symptoms of anxiety and depression over four years during adolescence. Their results favored displacement processes, where screen time forecasted less physical activity which forecasted more depressive symptoms.

Alternatively, it can be proposed that certain aspects of the social media platform, including social comparison, cyberbullying, and addictive design features, directly influence psychological wellbeing according to the stimulation hypothesis. Vannucci and McCauley Ohannessian (2019) examined social media use subgroups and their differential prediction of psychosocial wellbeing during early adolescence. Their person-centered methodology was able to demonstrate that there were specific patterns of platform use (e.g., high Instagram and Snapchat use vs. high Facebook use) that were associated with wellbeing outcomes, which demonstrated platform-dependent effects.

The differential susceptibility model is the assumption that the effects of social media are not always similar across individuals and some adolescents are susceptible to negative effects more than others are. The framework focuses on multiplier impacts among digital interaction and underlying vulnerabilities, and it can be argued that generalizations about the evils or advantages of social media focus on significant heterogeneity.

3.2 Two-way / Bi-directional and Reciprocal Dynamics

Maybe the most significant conceptual advancement in this literature is the realization that the association between social media and mental health is probably a two-way one. Teenagers with depression or anxiety can find comfort and support in social media and become more active users. At the same time, excessive consumption of social media can lead to mental health issues due to the absence of sleep, comparison, and cyberbullying. Puukko et al. (2020) conducted a longitudinal study examining social media use and depressive symptoms from early to late adolescence. They found that there were reciprocal relationships which indicated that social media use indicated future depressive symptoms and pre-existing mental health problems indicated more intensive use of social media. Such two-way processes make it more challenging to determine causal relationships and indicate that even a reduction in simple screen time can not be effective in promoting mental health.

3.3 The Digital Engagement-Mental Health Model

Comparative research of theoretical models and their predictions through time is shown in Table 1.

Table 1: Theoretical Models of Social Media Effects on Adolescent Mental Health

Model	Core Mechanism	Longitudinal Prediction	Key Empirical Support
Displacement Hypothesis	Social media displaces protective activities (physical activity, sleep, face-to-face interaction)	Increased social media use → decreased protective activities → increased mental health problems	Gunnell et al. (2016): Screen time predicted reduced physical activity, which predicted increased depressive symptoms
Stimulation Hypothesis	Platform-specific features (social comparison, cyberbullying, addictive design) directly impact	Platform use patterns differentially predict mental health trajectories	Vannucci & McCauley Ohannessian (2019): High Instagram/Snapchat use showed distinct associations compared to high Facebook use

	wellbeing		
Differential Susceptibility Model	Individual characteristics moderate media effects	Vulnerable adolescents experience stronger negative effects; resilient adolescents show neutral or positive effects	Winstone et al. (2022): User subgroups showed different mental health trajectories based on engagement patterns
Bidirectional Dynamics Model	Reciprocal influences between social media use and mental health over time	Social media use ↔ mental health symptoms (mutual reinforcement)	Puukko et al. (2020): Evidence of reciprocal associations between social media use and depressive symptoms

This integrative model acknowledges that a longitudinal association is too complicated to be explained by one model. Instead, various mechanisms can act at various times of development, to various individuals and on various platforms.

4. Analysis

4.1 Longitudinal Evidence on Social Media and Depression

Temporal Associations and Effect Sizes

Findings of longitudinal studies on depressive symptoms and social media use have been more or less consistent, although the effect sizes are small. Coyne et al. (2020) conducted an eight-year longitudinal study examining whether time spent using social media impacts mental health. After following 500 adolescents between the ages 13 and 20, they discovered no relationship between the heightened use of social media and heightened mental health problems at developmental stages when analyzed at individual level. It is worth noting that the effect sizes were also less than those that are normally found in cross-sectional studies and this indicates that previous studies could have exaggerated associations.

These associations have been studied in the particularity of their expression in various forms of screen use. Mougharbel and Chaput (2023) explored longitudinal relationships between symptomatic depression and anxiety and various forms of screen use in

adolescents. In their results they found that the use of social media had stronger correlations with mental health outcomes than other screen time activities like television viewing or video gaming implying that not all screen time is equal.

The article by Kelly et al. (2018) incorporated data published in the UK Millennium Cohort Study to explore the link between social media use and adolescent mental health. Their extensive longitudinal study found that the high use of social media (more than three hours a day) was correlated with higher chances of being in a state of psychological distress even after adjusting to the status of mental health in the past. The nature of dose-response relationship that was found in the present study implied that the degree of risk increases with the exposure, but the effects were of a small scale.

Platform-Specific Effects

The various social media that are used might have different effects on adolescent mental health since they offer different types of contents, features, and audiences. Instagram is an application that has been theorized to be particularly harmful to body image and self-esteem, particularly in adolescent girls due to the significance of the visual self-presentation and social comparison within its scope.

Longobardi et al. (2020) explored links between Instagram popularity, social media addiction, cyber victimization, and subjective happiness in Italian adolescents. Their longitudinal results showed more popular adolescents on Instagram became more cyber victimized in the long term, which predicted declines in subjective happiness. This study sheds light on the potential risks that could be introduced by platform-specific characteristics, including the number of followers and metrics of public popularity.

Woodward et al. (2025) considered the time spent on different platforms such as Tik Tok, Twitter, Instagram, Facebook, YouTube, Snapchat, and Reddit in relation to mental health among young adults. Their results found platform-specific trends, where the use of Snapchat was negatively related to mental health outcomes compared to other platforms. These results indicate that platform-specific interventions can be better in this case than standardized screen time limitations.

Timing and Sensitive Periods of Development

Timing of exposure to social media also may have an effects on the psychological effects of social media. Adolescence is a unique period of development with an early

adolescence (ages 10-13) being marked by puberty and an increased social sensitivity and a late adolescence by identity integration and initiation into adulthood.

The study by Beeres et al. (2021) is a longitudinal investigation with a 2-year follow-up study that investigated social media and mental health among Swedish early adolescents. Their results showed that the more they used social media initially, the more likely to experience the symptoms of mental ill-health two years later, and that effects were the strongest in younger adolescents. This implies that early adolescence can be a sensitive stage where the exposure to social media is more dangerous.

4.2 Anxiety, Psychological Distress

In addition to depression, longitudinal studies have also found relationships between social media use with anxiety symptoms. These constructs may have different mechanisms associated with them: the impact of depression can be connected to the social comparison and replacement of the rewarding activities, the effect of anxiety can be motivated by fear of missing out (FOMO), social assessment issues, and experience of cyberbullying.

Thorisdottir et al. (2020) conducted a longitudinal cohort study examining whether social media use among adolescents is related to symptoms of social anxiety. They discovered that three waves of school-based surveys revealed that use of social media had predicted higher social anxiety over the time with some of the effects being mediating with experience of cyberbullying. The study emphasizes the need to study particular types of anxiety as opposed to distress.

Khouja et al. (2019) examined screen time associations with anxiety and depression using data from a UK birth cohort. In their longitudinal study, they found out that better screen time at the age of 14 was predictive of anxiety symptoms at the age of 17, even after adjusting baseline levels of anxiety. These temporal associations are quite specific, which justifies worries regarding the effects of social media on the anxiety of adolescents, but the authors reported that the effect sizes were still low.

The Sleeping-As-A-Mediating-Mechanism

One of the major ways in which mental health can be affected by the use of social media is sleep disruption. The mutual dependence between sleep and anxiety is well-known,

where poor sleep predisposes it to anxiety, and the opposite effect of anxiety manifesting in sleep architecture.

The study by Plackett et al. (2023) is a longitudinal observational research that investigates how the use of the social media affects the mental health of UK adolescents. Their review found that the impact of social media use on mental health was partially mediated by sleep disturbance, and high use in the evening was especially harmful to the quality of sleep and the resultant psychological wellbeing. The implication of this finding is that sleep-based interventions can moderate against the adverse mental health effects of social media.

4.3 Evidence of Systematic Reviews and Meta-Analytic Synthesizing the Longitudinal Literature

With the growth of longitudinal research in this field, systematic reviews and meta-analyses can give essential summaries of the general effect sizes and reliability of results. The type of review is a narrative concept of longitudinal studies that analyze the use of social media and teen wellbeing (Course-Choi and Hammond, 2021). The synthesis of their findings showed that although the majority of longitudinal studies statistically demonstrate statistically significant differences between the use of social media and their outcomes on mental health, the effect sizes are typically small and variable across researchers.

The diversity in the results is a measure of methodological variation such as measuring social media use (self-report and objective assessment) and the conceptualization of the use of social media (time-based and frequency-based) and the control of confounding factors. Controlling studies which censor the mental health status at baseline have reported smaller effects than studies which examine the associations concurrently, arguing that some of the relationships which are established are attributable to pre-existing vulnerabilities.

Tang et al. (2021) developed a systematic review of longitudinal studies on the relationship between screen time and mental health in the youth. Their criterion analysis showed that there was a steady evidence of higher screen time as predicting more internalizing symptoms in the long term, but the quality of the evidence differed significantly among studies. Notably, they also established that associations of social

media and internet use were higher than the television or video game use, which indicates the specificity of the effects of social media.

Moderators and Individual Differences

Table 2 presents key moderators of longitudinal associations between social media use and mental health outcomes.

Table 2: Moderators of Social Media-Mental Health Associations

Moderator	Finding	Implications
Age/Developmental Stage	Effects stronger in early adolescence (10-13 years) compared to late adolescence	Early adolescence represents sensitive period for intervention
Gender	Girls show stronger associations for body image and depression; boys show stronger associations for gaming and externalizing problems	Gender-specific intervention approaches may be warranted
Platform Type	Visually-oriented platforms (Instagram, Snapchat) show stronger associations with body dissatisfaction and depression; text-based platforms show weaker or null associations	Platform-specific interventions more effective than blanket restrictions
Usage Pattern	Passive use (scrolling, viewing) more strongly associated with negative outcomes than active use (posting, commenting)	Interventions promoting active engagement may be beneficial
Baseline Mental Health	Adolescents with pre-existing vulnerabilities show stronger negative effects	Targeted prevention for at-risk youth
Sleep Moderation	Effects partially mediated by sleep disruption; evening use particularly detrimental	Sleep hygiene interventions may buffer negative effects
Social Support	Strong offline relationships buffer against negative effects	Strengthening offline connections may be

protective

Note. Synthesized from Vannucci and McCauley Ohannessian (2019), Winstone et al. (2022), and Plackett et al. (2023).

The degree and orientation of social media impacts are quite different among the individuals. Based on longitudinal data of 13-14-year-old adolescents in the United Kingdom, Winstone et al. (2022) have explored the types of social media users among adolescents and their relationships with mental health and wellbeing. Their latent class analysis developed particular user subsets with various patterns of platform use and engagement styles. Importantly, they were able to identify that high social media users demonstrated varying mental health experiences when their social media use was active (posting, commenting) and passive (scrolling, viewing).

Such results are consistent with the differential susceptibility model, indicating that individual factors, such as personality traits, already-present mental health condition, and offline social support also mediate the impact of social media. Young people whose offline relationships are good and have healthy coping mechanisms could be buffered against the adverse effects whereas those who were already vulnerable could see their symptoms worsened.

4.4 Mechanisms of Influence

Social Comparison and Self-Evaluation

Social comparison is one of the main ways of how social media can influence mental health. Social media like Instagram have some of the most controlled and at times mythical versions of other peers, and these upward comparison opportunities can harm self-esteem and body image.

The longitudinal studies contribute to the mediation of social media effects with the help of social comparison. Teenagers who make more frequent social comparisons through social media demonstrate more significant depressive symptoms changes over time, even when adjusting for initial levels of depression. The comparison processes might be enhanced by the visual character of such platforms as Instagram and Snapchat because the latter focuses on presentation and image on such platforms.

Cyberbullying and Internet Harassment

Cyberbullying is a more direct route to social media use as a cause of mental health issues. Cyber bullying, in contrast to the traditional bullying, is all time and can reach out to more people and accompany adolescents at home via mobile phone devices.

There is a consistent longitudinal research that indicates that victimization by cyberbullying relates to future rise in depression and anxiety. The two-way character of these relationships can also be observed: adolescents with mental health issues can be both the victims of bullying or get involved in the activities that can make them vulnerable. This causes vicious cycles which increase distress with time.

Subjective Sleep Problems and Circadian Impact

The mental health is greatly affected by the temporal dynamics of the use of social media. The evening and nighttime use seem to be especially harmful because of blue light exposure to the melatonin production and cognitive arousal disrupting the process of sleep.

Babic et al. (2017) investigated longitudinal relationships between alterations in screen-time and adolescent mental health. Their result showed that the increase of screen time during a school year forecasted worse mental health, and the quality of sleep mediated these results to some extent. The results can indicate that sleep hygiene programs can be effective especially in adolescents who have a history of heavy social media use in addition to mental health problems.

Addiction and Compulsive Use Patterns

In other teenagers, the use of social media develops into an addiction-like behavior of compulsive use which is uncontrollable and consumed by the urge to use and use it in spite of its adverse effects. These trends have more links with mental health issues as compared to normative use.

In a longitudinal study, Hoekby et al. (2023) determined the longitudinal impact of screen time on depressive symptoms in Swedish adolescents on the moderating and mediating effect of coping engagement behavior. Their results revealed that the connection between screen time and depression was the most effective among those adolescents who employed social media as a maladaptive coping mechanism, meaning that motivation and context of use is equally important to time.

4.5 Safety-Netting Factor(s) and Healthy Interaction

Active versus Passive Use

Not- everything that occurs in social media is equally harmful. It is becoming clear that research is differentiating between active and passive use (creating content, direct messaging, community participation and scrolling feeds, consuming content without any interaction). Active use can also offer social support opportunity, expression of identity and development of skills whereas passive use has been found to be invariably related to adverse effects.

Longitudinal research on this difference indicates that aggressive social media use is less or non-correlated with mental issues than passive use. This is an indication that interventions that encourage active and purposeful engagement could be better than mere time constraints.

Online Literacy and Literary Criticism

Overall, the skill of adolescents to play a critical role in assessing the content of social media might mitigate the adverse effects. Digital literacy, or being aware of the methods of content curation, advertising and manipulation, and having an outlook on the realities that are being presented, can be the safeguard against social comparison and unrealistic expectations.

Although the longitudinal research as applied to digital literacy interventions is still less developed, cross-sectional results indicate that adolescents who have a higher level of skills in critical media are better mentally healthy at the same level of social media usage. This is a valuable potential path of prevention and intervention.

5. Discussion

This systematic review shows that the longitudinal correlations that exist between social media use and mental health of adolescents are multifaceted, two-sided, and small. The data always indicate statistically significant correlations between heavy social media use and augmented depressive symptomatology and anxiety over an extended period, yet the impact measures are commonly minute and differ among individuals and circumstances.

This analysis has five major findings:

To start with, associations are two-way and not one-way. Social media use predicts subsequent mental health problems, but pre-existing vulnerabilities also drive increased social media use, creating reciprocal reinforcement cycles (Puukko et al., 2020).

Secondly, there are platform-specific effects that do not suggest the equivalence of all uses of social media. Social platforms that focus on public measurements, such as Instagram, Snapchat, exhibit greater correlations with mental health issues than textual or video platforms (Vannucci and McCauley Ohannessian, 2019; Woodward et al., 2025).

Third, timing is of importance, and early adolescence (ages 10-13) is a period of high risk where exposure to social media has a significant risk (Beeres et al., 2021).

Fourth, patterns of usage act as moderators, where passive consumption has more negative outcomes in comparison to active, purposeful use (Winstone et al., 2022).

Fifth, the disruption of sleep becomes one of the central mediating factors, which indicates that sleep-oriented intervention can be used as a buffer to mitigate adverse effects on mental health (Plackett et al., 2023).

The results are consistent with an integrative theoretical framework which attributes displacement, stimulation, and differential susceptibility. There is no single theoretical approach that would be able to explain the complexity of longitudinal associations. Instead, various mechanisms seem to be active at various periods of development, to various individuals, and on various platforms.

The fact that two-way dynamics have been reported in several studies are not consistent with the simple causal models and indicate that social media use and mental health in adolescents is a complex system with feedback mechanisms and reciprocal effects. This complexity has significant implications to intervention design, which implies that one-component interventions (e.g. time limits only) might not adequately support digital wellbeing.

Small effect sizes of longitudinal studies found relative to larger cross-sectional relationships imply that previous studies could have over-estimated the effect of social media by not accounting for underlying vulnerabilities and third-variable confounds. This is not to deny the fact that the effects of social media are negligible, but the effect takes place in complex developmental environments that involve a number of risk and protective factors.

The longitudinal evidence base is experiencing a number of methodological shortcomings that limit the ability to be sure about the conclusions. Self-report measures of social media use are poorly concordant to objective measures, and are susceptible to social desirability and recall bias. Passive sensing and data provided by the platform should be included in future studies since they would enhance the accuracy of measurements.

Also, the fast changing social media environment implies that the study about particular platforms can become outdated within a short period of time. Digital engagement that is characterized by methods that grasp general principles, and not platform-specific conducts might be more sustainable and generalized.

The need to create causal links between social media use and mental health has been problematic because it is impossible to allocate adolescents to various levels of social media use randomly. The natural experiments, instrumental variables and sibling comparison designs provide potentially viable ways of enhancing causal inference, yet the nature of the bidirectional relationship implies that simple causal models might not be adequate.

Practical Implications

For Parents and Families

The issue of parents who are going to negotiate the use of social media during the adolescent stage has complexities which demand subtle solutions. It is indicated that it is more effective to pay attention to context instead of time limits that are not taken into account and it is also important to consider when, how, and why teenagers use digital platforms. Evening restrictions of use appear to be especially vital in protection of sleep. Promoting active participation, i.e. utilization of social media to connect and create content as opposed to passively scrolling throughout your feed, can prevent adverse effects on mental health. Open and non-judgmental dialogue regarding the experience of social media (cyber bullying and social comparison) assists adolescents to digest difficulties. The behavior and attitude of adolescents towards technology can largely depend on parental modeling of the healthy use of digital media.

For Educators and Schools

Through combined teaching and learning methods, schools are critical to enhancing digital wellbeing. The digital literacy curriculum must teach the essential skills of critical media consumption that allows students to appreciate the aspects of algorithmic curations and persuasive designs. Sleep health education is also another necessary element, which will educate students about the significance of sleep and effective ways of safeguarding rest online. Training of school counselors is needed to measure when the use of social media is associated with the distress of students so that one can intervene and help them early.

For Policymakers and platform designers

Systemic intervention is a policy level and design intervention that is worth considering. To reduce exposure to potential addictive content and harmful content, age-appropriate design criteria should control the platforms so that adolescents can use them. The independence of mental health impact evaluation would be made easier through transparency requirements that allow access to the data on the platform by researchers. Protective controls like the night time notification banning and the capability to discourage compulsive behavior could greatly mitigate the risks at the level of the population but not to control the personal option.

6. Conclusion

This literature review has demonstrated that social media use and adolescent mental health are in a complicated relationship with each other which is complicated and subtle. Three major findings emerge: (1) high levels of social media use demonstrate stable but small relationships between high levels of depressive symptoms and anxiety and (2) there are bidirectional relationships with underlying vulnerabilities, with vulnerable individuals forming maladaptive consumption patterns, and social media having a direct effect on developing symptoms; (3) there are platform specific effects, with visually-focused platforms with public metrics being riskier; (4) passive use is more harmful than active use; and (5) sleep disruption is an important linking variable.

Instead of seeing social media as a necessarily harmful or neutral platform, the effects are influenced by the design of the platform, the patterns of engagement, and the susceptibility of an individual. The naive appeals of the former or the terror of the latter

are probably not going to be beneficial to the youth. The multifaceted framework of interventions including individual, family, and systemic elements is needed to support the digital wellbeing of adolescents.

Possible areas of future research are: broader populations and non-WEIRD samples, mechanistic research that verifies theoretical assumptions; intervention research with long-term follow-up; and positive outcomes such as social connection and identity formation. Due to the changing technologies, longitudinal studies were crucial and continued. The aim is not to go back to a pre-digital adolescent time, but to facilitate healthy and balanced relationships with technology that are as beneficial as they can be and as harmless as they can be. The digital dilemma is a complex and multifaceted issue that demands delicate, evidence-based solutions to it by parents, educators, policymakers and platform designers who are concerned with the welfare of adolescents in a more digitalized world.

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