

https://dspace.org/

Prevalence and Patterns of Social Media Use in Early Adolescents

J Nagata; Z Memon; J Talebloo; K Li; E et al ...

https://hdl.handle.net/10539/48611
WOS

Downloaded from a DSpace repository. https://dspace.org/

Prevalence and Patterns of Social Media Use in Early Adolescents

Jason M. Nagata, MD, MSc; Zain Memon; Jonanne Talebloo, BA; Karen Li, MPH; Patrick Low, BA; Iris Y. Shao, PhD, MPH; Kyle T. Ganson, PhD, MSW; Alexander Testa, PhD; Jinbo He, PhD; Claire D. Brindis, DrPH; Fiona C. Baker, PhD

From the Department of Pediatrics (JM Nagata, Z Memon, J Talebloo, K Li, P Low, IY Shao, and CD Brindis), University of California, San Francisco, Calif; Factor-Inwentash Faculty of Social Work (KT Ganson), University of Toronto, Toronto, Ontario, Canada; Department of Management (A Testa), Policy and Community Health, University of Texas Health Science Center at Houston; Division of Applied Psychology (J He), School of Humanities and Social Science, The Chinese University of Hong Kong, Shenzhen, Guangdong, China; Philip R. Lee Institute for Health Policy Studies (CD Brindis), University of California, San Francisco, Calif; Center for Health Sciences (FC Baker), SRI International, Menlo Park, Calif; School of Physiology (FC Baker), University of the Witwatersrand, Johannesburg, South Africa

Address correspondence to Jason M. Nagata, MD, MSc, 550 16th St, 4th Floor, Box 0503, San Francisco, Calif 94143 (e-mail: jason.nagata@ucsf.edu).

Received for publication August 9, 2024; accepted January 7, 2025.

Abstract

Objective: To describe patterns of social media use, including underage use (under 13 years) and sex differences, in a diverse, national sample of early adolescents in the US.

Methods: We analyzed the social media use data in the Adolescent Brain Cognitive Development Study (2019–2021, Year 3), which includes a national sample of early adolescents in the US. Specifically, using Chi-square and *t*-tests, we compared social media use patterns across demographic characteristics stratified by age and sex.

Results: In the sample of 10,092 11-to-15-year-old adolescents, 69.5% had at least one social media account; among social media users, the most common platforms were TikTok (67.1%), YouTube (64.7%), and Instagram (66.0%). A majority (63.8%) of participants under 13 years (minimum age requirement) reported social media use. Under-13 social media users had an average of 3.38 social media accounts, with 68.2% having TikTok accounts and 39.0% saying TikTok was the social media site they used the most. Females reported higher use of TikTok, Snapchat, Instagram, and Pinterest, while males reported higher use of YouTube and Reddit. Additionally, 6.3% of participants with social media accounts reported having a secret social media account hidden from their parents' knowledge.

Conclusions: Our findings reveal a high prevalence of underage social media use in early adolescence. These findings can inform current policies and legislation aimed at more robust age verification measures, minimum age requirements, and the enhancement of parental controls on social media. Clinicians can counsel about the potential risks of early adolescent social media use.

Keywords: adolescent; digital media; media; social media; social networking; technology; youth

Academic Pediatrics 2025; 25:102784

What's New

In a sample of 10,092 US early adolescents, a majority (63.8%) of participants under 13 years old (minimum age requirement) reported social media use. Under-13 social media users had an average of 3.38 social media accounts.

Social media has become a popular medium for communication among early adolescents in recent years. The minimum age for most social media platforms (including TikTok, Instagram, Snapchat, Facebook, Twitter, YouTube, Pinterest, Tumblr, and Reddit) is 13 years old in accordance with the Children's Online Privacy Protection Rule of 1998.[1] However, due to a lack of robust age verification, it is common for underage individuals to open and maintain social media accounts. One European study demonstrated that 42% of children 9–12 years old had an underage Facebook account in 2013–2014; however, other social media platforms have risen in popularity in the past decade, and these findings may not be applicable to the US.[2] Prior analyses of the Adolescent Brain Cognitive Development (ABCD) Study in the US have reported screen time, including time spent on social media, in 9–15-year-olds;[3–6] however, granular data about specific social media platforms and underage social media use were not analyzed. Parental mediation and restrictions have been found to lower the probability of underage children creating social media accounts, but the personalized nature of mobile devices and the increase in social media use make it challenging for adult control and regulation.[2]

© 2025 The Authors. Published by Elsevier, Inc. on behalf of Academic Pediatric Association. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

While multiple benefits of social media have been identified, including access to information and peer support, unregulated access to social media may expose young audiences to content that may be harmful or inappropriate.[7] Unregulated access to social media in early adolescents may pose a particular concern within this population. Studies have shown the impacts of social media on adolescent development and its negative impacts on physical and mental health.[8,9] Early adolescent social media use in the ABCD Study is associated with poor sleep,[4] substance use initiation,[5] cyberbullying,[10] and eating disorders.[6] Importantly, the negative impacts of social media have also been shown to vary considerably depending on the platform.[11] Given these risks, updated investigations on the prevalence of social media use by type of platforms, particularly among underage users, would help inform regulatory and public health policies.

There may also be sex differences in patterns of early adolescent social media use. Overall, early adolescent girls have reported higher social media time and more problematic social media use, characterized by elements of addiction such as conflict, tolerance, withdrawal, and relapse, than early adolescent boys.[12] However, differences in the use of specific platforms are less well documented as prior research has not examined as large of a sample, or focused solely on early adolescents.[13,14]

Previous literature has found varying levels of popularity of different social media platforms among adolescents. Since the COVID-19 pandemic, adolescents have primarily communicated via the Internet, with the most popular platforms being Instagram, TikTok, and YouTube.[9] However, these investigations were primarily conducted among older adolescents and did not focus on the period of early adolescence in which individuals may be particularly susceptible to adverse social media-related outcomes,[15] and in which acknowledgment of underage adolescents' use of social media may not be recognized by their parents or teachers. The objective of this study was to provide granular data about platform-specific social media use in early adolescents by leveraging data from the Adolescent Brain Cognitive Development (ABCD) Study, a prospective national, demographically diverse cohort of 11-to-15-year 15-year-old adolescents in the United States. In addition, the study aimed to describe differences in specific social media use platforms by sex and age.

METHODS

STUDY POPULATION

The current analysis utilized data from the Adolescent Brain Cognitive Development (ABCD) Study. The ABCD study is a multi-center cohort study designed to assess brain development and adolescent health across 11,875 children recruited from 21 geographically diverse sites around the United States. Participants were mostly recruited and sampled through schools, taking into consideration gender, race and ethnicity, socioeconomic status, and urbanicity to minimize sample selection bias.[16–18] More specifically, the ABCD Study employed probability sampling of US schools within the 21 areas as the primary method to identify which schools to target for recruitment. The 21 areas were geographically distributed to the nation's four major regions (Northeast, South, Midwest, and West) and were demographically and socioeconomically diverse. The ABCD Study used annual databases maintained by the National Center for Education Statistics, which provided sociodemographic characteristics of students attending each public and private school in the catchment areas of the 21 study sites. The ABCD Study selected a stratified, probability sample of schools from the sampling frame for each of the 21 sites, minimizing systematic sampling biases in recruitment at the school level. Thus, the sample is epidemiologically informed but may not be fully representative of the US population since research participation was voluntary. Incompleteness at any particular school and the response rates for individual students within the schools are not incorporated into the sample weighting schema.[18] Data that included adolescent social media use information from the Year 3 follow-up (2019–2021), and complete survey weights (ABCD 5.1 release) were utilized. Participants missing social media variables or survey weights were excluded from the analysis, resulting in a final sample of 10,092 included adolescents (Supplemental Appendix). Informed consent was obtained from caregivers, and assent was secured from each participating adolescent. The University of California, San Diego institutional review board (IRB) approved the study, and local IRB approval was granted at each participating site. Further details of the ABCD Study design and recruitment have been previously described.[16]

MEASURES

SOCIAL MEDIA USAGE

This analysis used the ABCD Study's Youth Screen Time Questionnaire, in which social media usage was measured based on self-reported responses from all adolescent study participants. The questionnaire was administered to youth via iPad through Research Electronic Data Capture (REDCap). All adolescents were asked to self-report their typical daily social media use in hours and minutes, distinguishing between weekdays and weekends.[19] Total daily social media use was computed as a weighted average using the formula: ([weekday average × 5] + [weekend average × 2])/7.[3]

All participants were also asked, "Do you have at least one social media account?" Participants who reported at least one social media account (n = 6779) were then asked a series of questions about social media use. Table 1 lists the specific questions asked. Categorical variables were defined as binary variables in response to Yes/No questions (eg, "Do you have a secret social media account that you keep secret from your parents?") or based on the social media site that was used (eg, Instagram, Tiktok).

Table 1. Sociodemographic and Social Media Characteristics of Adolescent Brain Cognitive Development (ABCD) Study Participants in Year 3 (N = 10,092)

Characteristic	Total	Under 13 y	13 y and Over		Male	Female	
	Mean (SD)/%*	Mean (SD)/%*	Mean (SD)/%*	P^2	Mean (SD)/%*	Mean (SD)/%*	$P^\dagger$
Age	12.9 (1.0)	12.4 (0.3)	13.5 (0.3)	< 0.001	12.9 (1.0)	12.9 (0.9)	0.30
Sex assigned at birth				0.009			—
Male	51.7%	49.8%	46.8%		—	—	
Female	48.3%	50.2%	53.2%		—	—	
Race and ethnicity				0.007			0.07
White	54.4%	53.6%	55.3%		55.3%	53.6%	
Latino	19.9%	20.2%	19.5%		20.5%	19.2%	
Black	15.6%	16.3%	14.9%		14.6%	16.7%	
Asian	5.5%	5.0%	6.1%		5.4%	5.6%	
Native American	3.1%	3.7%	2.5%		2.8%	3.5%	
Other	1.4%	1.2%	1.7%		1.5%	1.4%	
Household income				0.40			0.80
Less than $25,000	16.3%	16.7%	15.8%		16.7%	15.9%	
$25,000 to < $50,000	20.0%	20.4%	19.5%		19.6%	20.4%	
$50,000 to < $75,000	17.9%	17.8%	18.0%		18.2%	17.5%	
$75,000 to < $100,000	14.0%	14.2%	13.8%		13.7%	14.3%	
$100,000 to < $200,000	24.2%	23.5%	24.8%		24.1%	24.2%	
$200,000 or higher	7.7%	7.4%	8.1%		7.7%	7.7%	
Parental education				0.30			0.30
More than high school	82.1%	81.6%	82.6%		82.5%	81.7%	
High school or less	17.9%	18.4%	17.4%		17.5%	18.3%	
COVID-19 pandemic				0.01			0.80
Before COVID-19 pandemic	15.5%	14.5%	16.5%		15.4%	15.5%	
During COVID-19 pandemic	84.6%	85.5%	83.5%		84.6%	84.5%	
Do you have at least one social media account?				< 0.001			< 0.001
No	30.5%	36.2%	24.5%		34.6%	26.1%	
Yes	69.5%	63.8%	75.6%		65.4%	73.9%	
Social Media Time (h/d)	0.19 (0.25)	0.20 (0.25)	0.19 (0.25)	0.30	0.21 (0.25)	0.18 (0.25)	< 0.001
Social media characteristics of Adolescent Brain Cognitive Development (ABCD) Study participants in Year 3 that reported social media use (N = 6,779)							
Which social media sites do you have an account on?							
Facebook	17.5%	14.1%	20.3%	< 0.001	18.7%	16.2%	0.021
Instagram	66.0%	57.3%	73.5%	< 0.001	62.1%	69.6%	< 0.001
Snapchat	60.3%	55.2%	64.8%	< 0.001	53.7%	66.5%	< 0.001
Twitter	16.6%	13.0%	19.7%	< 0.001	19.0%	14.2%	< 0.001
YouTube	64.7%	62.9%	66.3%	0.008	71.7%	58.1%	< 0.001
Pinterest	22.0%	19.9%	23.8%	< 0.001	4.8%	38.3%	< 0.001
Tumblr	1.9%	1.5%	2.3%	0.03	0.8%	3.0%	< 0.001
Reddit	11.4%	9.0%	13.5%	< 0.001	18.1%	5.1%	< 0.001
Multiplayer Videogame Online Chatting	28.6%	28.9%	28.4%	0.70	39.6%	18.2%	< 0.001
Other	7.2%	7.9%	6.7%	0.10	8.7%	5.9%	< 0.001
TikTok	67.1%	68.2%	66.1%	0.09	55.9%	77.7%	< 0.001
Which social media site do you use the most?				< 0.001			< 0.001
I do not have a social media account	0.0%	0.0%	0.0%		0.0%	0.0%	
Facebook	0.8%	0.8%	0.8%		1.0%	0.5%	
Instagram	16.9%	13.8%	19.5%		17.2%	16.6%	
Snapchat	14.5%	11.9%	16.6%		12.3%	16.6%	
Twitter	0.6%	0.3%	0.8%		0.7%	0.5%	
YouTube	21.2%	22.6%	20.0%		31.0%	11.9%	
Pinterest	1.6%	1.7%	1.5%		0.1%	3.0%	
Tumblr	0.1%	0.1%	0.0%		0.0%	0.1%	
Reddit	1.2%	1.0%	1.5%		2.3%	0.2%	
Multiplayer Videogame Online Chatting	5.9%	6.4%	5.5%		9.0%	2.9%	
Other	2.0%	2.5%	1.5%		2.5%	1.5%	
TikTok	35.4%	39.0%	32.4%		24.0%	46.2%	

Table 1 (*Continued*)

Characteristic	Total	Under 13 y	13 y and Over		Male	Female	
	Mean (SD)/%*	Mean (SD)/%*	Mean (SD)/%*	P^2	Mean (SD)/%*	Mean (SD)/%*	$P^\dagger$
Do you have a secret social media account that you keep secret from your parents?				0.03			0.05
No	93.7%	94.6%	93.1%		94.4%	93.1%	
Yes	6.3%	5.4%	6.9%		5.6%	6.9%	
Number of Accounts (Continuous)	3.63 (1.89)	3.38 (1.82)	3.85 (1.92)	< 0.001	3.53 (1.88)	3.73 (1.90)	< 0.001
Number of Accounts (Categorical)				< 0.001			0.06
One Account	14.0%	16.9%	11.4%		14.9%	13.1%	
Multiple Accounts	86.1%	83.2%	88.6%		85.1%	86.9%	
Social Media Addiction Questionnaire score	2.1 (1.0)	2.06 (0.99)	2.10 (0.97)	0.06	1.98 (0.94)	2.19 (1.00)	< 0.001

* ABCD Study propensity weights were applied based on the American Community Survey from the US Census.
† Wilcoxon rank-sum test and *t*-test used for continuous variables; Chi-square test with Rao & Scott's second-order correction used for categorical variables.

The Social Media Addiction Questionnaire (SMAQ), adapted from the Bergen Facebook Addiction Scale,[20] was used to assess problematic social media use among participants with at least one social media account.[12] The questionnaire included items addressing mood modification, salience, relapse, conflict, and tolerance, with average scores calculated for each item. Table 2 lists the specific questions asked via six-level Likert variables measuring degrees of social media use.[12,20] The SMAQ exhibited strong internal consistency (Cronbach's alpha = 0.82) and test-retest reliability (r = 0.83).[20] A confirmatory factor analysis supported the adequacy of the single-factor model for the SMAQ.[19]

Statistical Analysis

Descriptive analyses were conducted for all social media measures to analyze the prevalence of social media usage in the ABCD Study sample. Additionally, all study measures were stratified by age group (under 13 vs 13 and over) and sex (male vs female) to understand potential differences by groups. Chi-square tests were used for comparisons of categorical variables and independent samples *t*-tests were used for comparisons of continuous variables. Analyses were conducted in R version 4.3.3. Propensity weights were applied based on the American Community Survey from the US Census.

Results

In our sample of 10,092 eligible participants (M_{age} = 12.9, SD_{age} = 0.97), 48.3% were female and 45.6% were from racial/ethnic minority groups (19.9% identified as Latino, 15.6% identified as Black, 5.5% identified as Asian, and 3.1% identified as Native American). A majority (69.5%) of adolescents reported having at least one social media account. Among those with social media accounts, the most popular social media sites were TikTok (67.1%), Instagram (66.0%), YouTube (64.7%), and Snapchat (60.3%). Furthermore, adolescents with social media accounts were most likely to use TikTok (35.4%), YouTube (21.2%), and Instagram (16.9%) the most, and 6.3% reported having a secret social media account hidden from their parents. Adolescent social media users also reported problematic use, with 25.3% reporting spending a lot of time thinking about social media apps (sometimes, often, or very often) and 25.2% reporting using social media apps to forget about their problems (sometimes, often, or very often, Table 2). Finally, participants reported an average of 0.19 hours of social media use per day (Table 1).

Differences in social media use stratified by sex and age are shown in Table 1. In sex-stratified analyses, female adolescent social media users reported higher use of TikTok (77.7% vs 55.9%), Snapchat (66.5% vs 53.7%),

Table 2. Problematic Social Media Use in the Adolescent Brain Cognitive Development (ABCD) Study

Social Media Addiction Questionnaire*	Never	Very Rarely	Rarely	Sometimes	Often	Very Often
I spend a lot of time thinking about social media apps or planning my use of social media apps.	31.0%	22.9%	20.7%	18.8%	4.7%	1.8%
I feel the need to use social media apps more and more.	43.2%	19.1%	22.8%	10.9%	3.0%	0.9%
I use social media apps so I can forget about my problems.	47.9%	14.2%	12.7%	16.7%	5.6%	2.9%
I've tried to use my social media apps less but I can't.	52.9%	15.1%	14.9%	11.2%	4.0%	1.8%
I've become stressed or upset if I am not allowed to use my social media apps.	58.0%	15.0%	12.1%	10.0%	3.3%	1.5%
I use social media apps so much that it has had a bad effect on my schoolwork or job.	66.6%	13.3%	9.3%	7.6%	2.3%	0.9%

ABCD propensity weights were applied based on the American Community Survey from the US Census.
* Asked among a subset who reported social media use (n = 6779).

Instagram (69.6% vs 62.1%), and Pinterest (38.3% vs 4.8%) compared to male adolescents ($P < 0.001$). Male social media users reported using YouTube more than females (71.7% vs 58.1%, $P < 0.001$). All differences between sexes were statistically significant.

In age-stratified analyses, we found that 63.8% of adolescents under 13 had at least one social media account. Among adolescents under 13 with social media accounts, TikTok (68.2%), YouTube (62.9%), Instagram (57.3%), and Snapchat (55.2%) were the most common. Among social media users under 13, 39.0% said they used TikTok the most, while 22.6% said they used YouTube the most. Overall, social media users aged 13 and over (compared to those under 13) had more social media accounts (3.85 vs 3.38, $P < 0.001$) and were more likely to have multiple accounts (88.6% vs 83.2%, $P < 0.001$).

DISCUSSION

In this demographically diverse, national sample of US adolescents aged 11–15 years old, we found that 69.5% of adolescents had at least one social media account with the most used platforms being TikTok, followed by YouTube, and Instagram. We further found sex differences present in adolescent screen use, with females predominantly using the social media sites TikTok, Snapchat, Instagram, and Pinterest while males predominantly use YouTube. A subset of our sample (6.3%) also reported having a secret social media account without their parent's knowledge.

In consensus with other studies documenting a rise in childhood social media use, our study found that 63.8% of adolescents under 13 years old possessed a social media account.[2] This is particularly notable as most social media platforms (including all of the platforms specifically listed in this study) require users to be 13 years of age or older, but a lack of robust age verification makes it possible for underage individuals to make social media accounts. The large proportion of younger adolescents already engaged in such social media use may also be of surprise to parents and other stakeholders, who may be under the impression that such use may be more prevalent in middle and older adolescents. Underage use of social media may be associated with several health concerns. Specifically, previous studies have documented that adolescent screen use was associated with several morbidities including psychological consequences, such as anxiety and depression.[9] Social media platforms influence poor health outcomes through several mechanisms such as targeted advertising, positive portrayals of risky behaviors, and negative emotional effects from exposure to media-idealized images.[21–23] The US Surgeon General has issued an advisory on social media and youth mental health and advocated for warning labels on social media.[24]

We found that 6.3% of early adolescents also reported having a secret social media account hidden from their parents. This aligns with previous research that has reported adolescents seeking secret social media accounts, like "Finstas" or fake Instagram accounts kept secret from parents and the public, as an adolescent-reported safe space for authentic use.[25] Notably, adolescents over the age of 13 years old had a statistically significant higher proportion of secret accounts. Early adolescence has been established as an important period of development for independence and a sense of self,[26] and secret social media accounts may provide a safe space for identity formation. However, parental guidance and oversight on social media play an important role in preventing the development of problematic screen use.[27] Elements of problematic screen use were also present in our study's population including significant time spent on planning or using social media, needing to use more and more, unsuccessful attempts to cut back on use, and negative impacts on school and work. Future research should investigate reasons for the creation of secret social media accounts by early adolescents as well as whether there are associations of secret social media accounts with the development of problematic screen use and other addictive behaviors.

Additionally, 28.6% of our sample reported using Multiplayer Videogame Online Chatting. Given the adolescents' high use of Multiplayer Videogame Online Chatting and in light of recent lawsuits against game makers like Epic Games for Children's Online Privacy Protection Act (COPPA) violations, policymakers should take action to strengthen protections and existing legislation like COPPA to protect youth, especially in overlooked social media forms like Multiplayer Videogame Online Chats.[28]

Our findings have significant public health and policy implications, particularly in informing policies and legislation aimed at more robust age verification measures, minimum age requirements, and the enhancement of parental controls on social media. Examples of current legislation addressing age verification include the federal Protecting Kids on Social Media Act (S.1291) and state legislation such as the Social Media Safety Act (Arkansas) and Parental Notification by Social Media Operators (Ohio), among several others. In the 2023 Advisory on Social Media and Youth Mental Health, the U.S. Surgeon General called to strengthen safety standards for social media platforms and advocate for more robust age verification measures due to the major prevalence of underage social media use.[24] Regardless of the outcome of these potential policies, the need for parental education regarding their adolescents' use of social media, as well as any additional potential "guard rails" will likely be relevant to several different stakeholders. These findings can also inform the implementation of social media guidance for parents of early adolescents. The American Academy of Pediatrics recommends a family media use plan, which may be individualized for early adolescents to focus on early social media use.[29] Educating and informing parents about health risks associated with early social media use, especially secret accounts that lack parental oversight, may be helpful and inform parental monitoring and limiting of social media use in early adolescence.[27,30]

Our study has several limitations. There is the potential for recall and social desirability bias due to the use of adolescent self-reported social media use. Our study sample focused on early adolescents, and findings may not be generalizable to older adolescents. Our data includes the first two years of the COVID-19 pandemic, which could skew our results as more adolescents could have been using social media as a way of staying connected during physical distancing. This difference could be further skewed by age group as there is a significant difference between under 13-year-olds (85.5%) and adolescents aged 13 and over (83.5%) reporting social media use during the pandemic, although the magnitude of the difference was small. Participants were not asked about time spent on each specific social media platform or patterns of use (eg, long continuous. use vs short use throughout the day) which could be an area of future research in young adolescents. Notable strengths of our study include its large and diverse sample of early adolescents, which is a sensitive period in adolescent development. Additionally, our study analyzes the use of individual social media sites among early adolescents, yielding more insights into specific platforms that are most heavily used in this age group.

Conclusion

Our study found that nearly 70% of US early adolescents in our sample had at least one social media account. Additionally, 63.8% of children under 13 in our study reported at least one form of social media use. Policies that protect early adolescents on social media, such as more robust age verification and enhancement of parental controls and privacy settings, should be implemented.[31] Pediatricians can educate parents and early adolescents regarding the potential risks of underage social media use, and also the protective roles that parents can play. Future studies could examine how early underage social media use specifically mediates the risk for health morbidities. Future research should also incorporate the newest social media platforms, which are constantly changing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

The authors thank Anthony Kung for editorial assistance. The ABCD Study was supported by the National Institutes of Health and additional federal partners under award numbers U01DA041022, U01DA041025, U01DA041028, U01DA041048, U01DA041089, U01DA041093, U01DA041106, U01DA041117, U01DA041120, U01DA041134, U01DA041148, U01DA041156, U01DA041174, U24DA041123, and U24DA041147. A full list of supporters is available at https://abcdstudy.org/federal-partners/. A listing of participating sites and a complete listing of the study investigators can be found at https://abcdstudy.org/principal-investigators.html. ABCD consortium investigators designed and implemented the study and/or provided data but did not necessarily participate in the analysis or writing of this report.

Financial Statement: J.M.N. was supported by the National Institutes of Health (K08HL159350 and R01MH135492) and the Doris Duke Charitable Foundation (2022056). The funders had no role in the study analysis, the decision to publish the study, or the preparation of the manuscript.

Authorship Statement: Jason M. Nagata: Writing – review & editing, Writing – original draft, Formal analysis, Data curation, Conceptualization, Supervision. Zain Memon: Writing - original draft; and Writing - review & editing. Jonanne Talebloo: Writing - original draft; and Writing - review & editing. Karen Li: Formal analysis; Writing - original draft; and Writing - review & editing. Patrick Low: Writing - original draft; and Writing - review & editing. Iris Y. Shao: Writing – review & editing. Kyle T. Ganson: Writing – review & editing. Alexander Testa: Writing – review & editing. Jinbo He: Writing – review & editing. Claire D. Brindis: Writing – review & editing. Fiona C. Baker: Writing – review & editing, Data curation.

Supporting Material

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.acap.2025.102784.

References

1. Bryan RH.DN. S.2326 - 105th Congress (1997–1998): Children's Online Privacy Protection Act of 1998. October 1, 1998. https://www.congress.gov/bill/105th-congress/senate-bill/2326/text. Accessed August 7, 2024.
2. Barbovschi M, Macháčková H, Ólafsson K. Underage use of social network sites: it's about friends. *Cyberpsychol Behav Soc Netw.* 2015;18:328–332. https://doi.org/10.1089/cyber.2014.0553
3. Nagata JM, Ganson KT, Iyer P, et al. Sociodemographic correlates of contemporary screen time use among 9- and 10-year-old children. *J Pediatr.* 2022;240:213–220.e2. https://doi.org/10.1016/j.jpeds.2021.08.077
4. Nagata JM, Cheng CM, Shim J, et al. Bedtime screen use behaviors and sleep outcomes in early adolescents: a prospective cohort study. *J Adolesc Health.* 2024;75:650–655. https://doi.org/10.1016/j.jadohealth.2024.06.006
5. Nagata JM, Sajjad OM, Smith N, et al. Social media use and alcohol sipping in early adolescents: a prospective cohort study. *Subst Use Misuse.* 2024;59:971–976. https://doi.org/10.1080/10826084.2024.2310501
6. Nagata JM, Iyer P, Chu J, et al. Contemporary screen time modalities among children 9–10 years old and binge-eating disorder at one-year follow-up: a prospective cohort study. *Int J Eat Disord.* 2021;54:887–892. https://doi.org/10.1002/eat.23489
7. Naslund JA, Bondre A, Torous J, Aschbrenner KA. Social media and mental health: benefits, risks, and opportunities for research and practice. *J Technol Behav Sci.* 2020;5:245–257. https://doi.org/10.1007/s41347-020-00134-x

8. Gonzales AL, Hancock JT. Mirror, mirror on my Facebook wall: effects of exposure to Facebook on self-esteem. *Cyberpsychol Behav Soc Netw.* 2011;14:79–83. https://doi.org/10.1089/cyber.2009.0411
9. Bozzola E, Spina G, Agostiniani R, et al. The use of social media in children and adolescents: scoping review on the potential risks. *Int J Environ Res Public Health.* 2022;19:9960. https://doi.org/10.3390/ijerph19169960
10. Nagata JM, Trompeter N, Singh G, et al. Social epidemiology of early adolescent cyberbullying in the United States. *Acad Pediatr.* 2022;22:1287–1293. https://doi.org/10.1016/j.acap.2022.07.003
11. Masciantonio A, Bourguignon D, Bouchat P, Balty M, Rimé B. Don't put all social network sites in one basket: Facebook, Instagram, Twitter, TikTok, and their relations with well-being during the COVID-19 pandemic. *PLoS One.* 2021;16:e0248384. https://doi.org/10.1371/journal.pone.0248384
12. Nagata JM, Singh G, Sajjad OM, et al. Social epidemiology of early adolescent problematic screen use in the United States. *Pediatr Res.* 2022;92:1443–1449. https://doi.org/10.1038/s41390-022-02176-8
13. Twenge JM, Martin GN. Gender differences in associations between digital media use and psychological well-being: evidence from three large datasets. *J Adolesc.* 2020;79:91–102. https://doi.org/10.1016/j.adolescence.2019.12.018
14. Anderson M, Faverio M, Gottfried M. Teens, social media and technology 2023. Pew Research Center. December 11, 2023. https://www.pewresearch.org/internet/2023/12/11/teens-social-media-and-technology-2023/. Accessed August 8, 2024.
15. Charmaraman L, Richer AM, Liu C, Lynch AD, Moreno MA. Early adolescent social media-related body dissatisfaction: associations with depressive symptoms, social anxiety, peers, and celebrities. *J Dev Behav Pediatr.* 2021;42:401–407. https://doi.org/10.1097/DBP.0000000000000911
16. Garavan H, Bartsch H, Conway K, et al. Recruiting the ABCD sample: design considerations and procedures. *Dev Cogn Neurosci.* 2018;32:16–22. https://doi.org/10.1016/j.dcn.2018.04.004
17. Barch DM, Albaugh MD, Baskin-Sommers A, et al. Demographic and mental health assessments in the Adolescent Brain and Cognitive Development Study: updates and age-related trajectories. *Dev Cogn Neurosci.* 2021;52:101031. https://doi.org/10.1016/j.dcn.2021.101031
18. Heeringa Sand Berglund P. A guide for population-based analysis of the Adolescent Brain Cognitive Development (ABCD) Study baseline data. bioRxiv. Published online February 2020. doi:10.1101/2020.02.10.942011.
19. Bagot KS, Tomko RL, Marshall AT, et al. Youth screen use in the ABCD Study. *Dev Cogn Neurosci.* 2022;57:101150. https://doi.org/10.1016/j.dcn.2022.101150
20. Andreassen CS, TorbjØrn T, Brunborg GS, Pallesen S. Development of a Facebook addiction scale. *Psychol Rep.* 2012;110:501–517. https://doi.org/10.2466/02.09.18.PR0.110.2.501-517
21. Barry AE, Bates AM, Olusanya O, et al. Alcohol marketing on Twitter and Instagram: evidence of directly advertising to youth/adolescents. *Alcohol Alcohol.* 2016;51:487–492. https://doi.org/10.1093/alcalc/agv128
22. Dakanalis A, Clerici M, Caslini M, et al. Internalization of socio-cultural standards of beauty and disordered eating behaviours: the role of body surveillance, shame and social anxiety. *J Psychopathol.* 2014;20:33–37.
23. Hendriks H, Van den Putte B, Gebhardt WA, Moreno MA. Social drinking on social media: content analysis of the social aspects of alcohol-related posts on Facebook and Instagram. *J Med Internet Res.* 2018;20:e226. https://doi.org/10.2196/jmir.9355
24. US Surgeon General. Social Media and Youth Mental Health: The US Surgeon General's Advisory; 2023. https://www.hhs.gov/sites/default/files/sg-youth-mental-health-social-media-advisory.pdf. Accessed November 6, 2023.
25. Weinstein E. The social media see-saw: positive and negative influences on adolescents' affective well-being. *New Media Soc.* 2018;20:3597–3623. https://doi.org/10.1177/1461444818755634
26. Erikson E. *Identity: Youth and Crisis*. New York: Norton & Co; 1968.
27. Nagata JM, Paul A, Yen F, et al. Associations between media parenting practices and early adolescent screen use. *Pediatr Res.* 2025;97:403–410. https://doi.org/10.1038/s41390-024-03243-y
28. Dwivedi YK, Kshetri N, Hughes L, et al. Exploring the darkverse: a multi-perspective analysis of the negative societal impacts of the metaverse. Published online June 2 *Inf Syst Front.* 2023:1–44. https://doi.org/10.1007/s10796-023-10400-x Published online June 2,.
29. Chassiakos YR, Radesky J, Christakis D, et al. Children and adolescents and digital media. *Pediatrics.* 2016;138:e20162593. https://doi.org/10.1542/peds.2016-2593
30. Worthman CM, Tomlinson M, Rotheram-Borus MJ. When can parents most influence their child's development? Expert knowledge and perceived local realities. *Soc Sci Med (1982).* 2016;154:62–69. https://doi.org/10.1016/J.SOCSCIMED.2016.02.040
31. Radesky J, Chassiakos YR, Ameenuddin N, et al. Digital advertising to children. e20201681 *Pediatrics.* 2020;146. https://doi.org/10.1542/peds.2020-1681