

A close-up photograph of a young person with dark skin, looking down intently at a tablet device held in their hands. The person is wearing a dark blue, textured button-down shirt. The background is blurred, suggesting an indoor setting with soft lighting.

2020

TWEENS, TEENS, TECH, AND MENTAL HEALTH:

COMING OF AGE IN AN INCREASINGLY DIGITAL,
UNCERTAIN, AND UNEQUAL WORLD

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AND MENTAL HEALTH:**

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A LETTER FROM OUR FOUNDER

We started the Common Sense Research program in 2012 to provide parents, educators, health organizations, and policymakers with reliable, independent data on children's use of media and technology, and the impact it has on their physical, emotional, social, and intellectual development. The *Common Sense Census* tracks and analyzes kids' media use by age group, and our subject matter reports take a deep dive into emerging or noteworthy media and technology trends to understand how they are impacting kids and families across the country and around the world. These subject-specific research reports have examined everything from how kids use and perceive social media to the impact of tech use on family dynamics, the role of media representations in teaching kids about gender equity, and how kids and families feel about privacy in our "always on" world.

As we mapped out our research calendar for 2020, we knew we wanted to look at the role media and technology play in kids' mental health. Over the past couple years, parents, news outlets, psychologists, and academics have sounded the alarm that American adolescents are in the grip of a mental health crisis, with rising rates of anxiety and suicide among all kids, primarily tween girls (age 10 to 14). To many, social media and technology seemed like the obvious culprit, so a Common Sense research report to understand this issue objectively was, as I like to say, a no-brainer.

And then the coronavirus pandemic hit.

As this research report goes to press, many of us in the United States have been sheltering in place and practicing social distancing for more than 100 days. Over 145,000 Americans have perished as a result of COVID-19, and our lives were turned upside down as schools transitioned to distance learning, businesses and restaurants closed, sporting events and festivals were canceled, and traditions from church celebrations to family reunions and vacations were all put on hold. People lost their jobs at a rate never seen before in history.

Compounding the stress of the pandemic, the murder of George Floyd catalyzed a long-overdue reckoning of the injustices Black Americans face at the hands of police, and the myriad problems wrought by systemic and institutional racism. Protests erupted around the country demanding justice, equality, and accountability. Tragic stories of Black American lives lost permeated our news feeds. Our country seems on the brink ... but of what is still unknown.

There's no doubt that during this unique moment in time, technology has become more of a lifeline than a threat: Classrooms and learning have migrated online, and kids use social media, FaceTime, and other online communities to connect with each other in lieu of face-to-face socializing. The kids with access have turned to technology to communicate with each other, support each other, and celebrate milestones like graduation and prom. Twitter and TikTok have been widely used to call for social justice and organize protests.

But as this report highlights, there is a massive equity gap in access to devices and the internet, leaving a whole swath of our population further behind and more at risk. Many of our most vulnerable adolescents—specifically those who are Black, Latinx, or from lower-income households—are unable to reliably access and receive support in digital spaces. Millions of kids lack adequate devices or connectivity to participate in school or any positive aspects of connectivity.

Digital media and technology can and should be a social safety net right now. *Tweens, Teens, Tech, and Mental Health* synthesizes what is known about adolescents' mental health and its associations with digital technology use. Perhaps most importantly, the report provides guidance to identify those who may be most vulnerable, signal when parents and caregivers should be concerned, and outline what stakeholders can do to help.

The COVID-19 crisis shined a bright light on the deep social and digital divides that allow some adolescents to benefit online, while placing many others at risk of being left further behind. We adults have a responsibility to give all children the support they need to recover from the events of 2020, build resilience, and eventually thrive in a new world.



James P. Steyer, founder and CEO

A handwritten signature in black ink that reads "Jim Steyer". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

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THE DIGITAL DIVIDE IS A BIGGER PROBLEM THAN LACKING ACCESS

The digital divide for children and families is a bigger problem than lacking access to devices and connectivity. There was a time we could say phones were optional, but electronic resources have become a basic necessity, especially during the coronavirus pandemic. People need to be connected in order to do the simplest things. At the start of the pandemic, we ordered food online because we were afraid to go outside. We tried to apply for unemployment online when the offices were closed. We did our best to educate our children when schools closed. Imagine trying to do all these things without having a device or reliable internet service.

As a parent in a lower-income household, you have to navigate these hardships by yourself while you may also be terrified of losing your job, worried about how you are going to pay your rent, or uncertain whether you will be able to provide food for your family. If you have no connectivity at all, how do you even begin to solve these problems?

There's going to be a mental health crisis in this nation that I don't think we've ever seen before. The post-traumatic stress will be devastating. For some people, the stress will not be "post," but will continue even after the pandemic is over. We know that COVID-19 is disproportionately affecting Black communities. Unemployment rates in the Black community are already at Great Depression levels, and Black-owned small businesses are going out of business at much higher rates than any other small businesses in this country.

We are watching the unwinding of all the progress that has been made over the last 30 or 40 years. With that comes stress—more specifically, toxic stress. That's going to create a mental health challenge that will become a real handicap for children. Parents have to be able to guide their children as they develop, but being under constant stress hinders their ability to do so.

Those of us in education are trying to make up for what kids lose when their families are in a state of toxic stress. At the Harlem Children's Zone, we are implementing mental health supports for kids and families into our plan for the pandemic recovery. It's important that we create a cultural and environmental experience with children reinforcing that they are important, that they are smart, that we care about them, and that we—the adults—have power and that power will protect them.



Geoffrey Canada
President, Harlem Children's Zone

MEETING TEENS WHERE THEY ARE

As a pediatrician and public health practitioner who works with teens, I'm always looking for innovative ways to educate my patients. A few years ago at my job at a local public health department, we were discussing effective ways to provide health information to teens in our county when we had a breakthrough: Why not meet them where they are, on their smartphones?

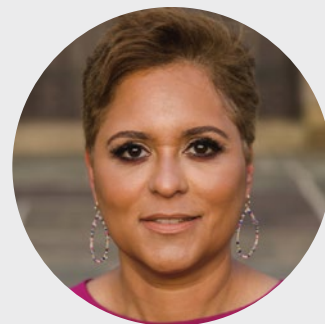
Close to 95% of teens—across all racial and ethnic groups¹—have access to a smartphone, and research has shown that teens use the internet to search for information on topics ranging from sexual health and nutrition to mental health and stress. This same research also indicated that teens sometimes found it hard to determine what sources of information were credible.² As a local health department, we were certain that we'd be a trusted and credible source of information.

So in partnership with a local teen organization, Voices for Change, my colleagues and I developed TeenHealthMatters.org, a mobile-accessible health website with credible health information and resources. The website was developed for and by racially and ethnically diverse teens in middle and high school to ensure the site would reflect the needs of that population and appeal to peers in the community. We covered topics including mental health and suicide prevention, stress management, sexual health, and physical health as well as drugs, alcohol, and vaping.

Over the last couple years, TeenHealth Matters has added a blog and podcast, with many episodes devoted to mental health. To make sure teen voices continued to be included, high school interns were recruited to develop relevant blog posts and serve as consultants and co-hosts on the development of podcast episodes, social media posts, and a suicide prevention campaign. TeenHealth Matters has become a vital resource for our community and has been incorporated into the local school system's health education curriculum as a resource.

With so many children and teens using the internet, social media, and their smartphones, there is an opportunity to address the digital divides that many teens of color experience. These are some lessons learned:

- We need to incorporate diverse and inclusive voices to ensure equitable access to vital health information and resources.
- Teens are important stakeholders in their health and well-being.
- Teens are looking for ways to contribute.
- Partnerships with schools and local organizations serving teens are great sources to gather feedback and find young volunteers.
- Projects and programs serving teens should include them in planning, implementation, and evaluation.



Jacqueline Dougé, M.D.

Pediatrician and co-author of the AAP policy statement on racism

¹Anderson, M., & Jiang, J. (2018). *Teens, social media & technology 2018*. Washington, D.C.: Pew Research Center. www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/

²Wartella, E., Rideout, V., Montague, H., Beaudoin-Ryan, L., & Lauricella, A. (2016). Teens, health, and technology: A national survey. *Media and Communication*, 4(3), 13-23. <http://dx.doi.org/10.17645/mac.v4i3.515>

PARENTING FOR A DIGITAL FUTURE

"We've got so much information now, about screen time is bad, or just stuff pumped at us; you sort of feel guilty if you let them have ... yes, if you let them have too much."

Can we "flip the script" from counting hours of screen time to distinguishing different types of online experiences? This is a pressing issue for the middle-class mother quoted above (and many parents we interviewed for our book *Parenting for a Digital Future: How Hopes and Fears About Technology Shape Children's Lives*). Melissa worries that screens "can take away their childhoods." But she also recognizes that her children are "growing up in a technological world" and wants them to be prepared. As a blogger, Melissa has some technological skills and creativity to share with her children, but screen time rules get in the way.

In Britain, as elsewhere, the rules on screen time set by the American Academy of Pediatrics are well known, but parents rarely know what those rules are based on or that the evidence is contested by experts. Leila, a single parent living on a low income, told us "in the news I heard ... no more than two hours." The rules seemed to her authoritative, absolute. Yet technology plays a crucial part in her life. Having migrated from Ethiopia, she loves to stream religious music from her home country to share with her daughters. She spent a lot on a computer to support their schoolwork, saying, "The bill is too much but you need it, you know, technology is growing."

For today's parents, counting the hours of screen time seems to miss the point. They need to prepare their children for a digital future, and they want their children to be digitally skilled and to make good judgments about what they do online. Parents themselves may be digitally skilled, even enthusiastic, about the digital world and want to pass this on to their children. We interviewed some families excited about the digital future, and who is to say this won't stand their children in good stead?

Others were struggling with challenges around money, health, work, family, or disability, and found technologies offer a way around their difficulties or an opportunity to relax with their children. Leila, for instance, is already stressed out and sad about working so hard away from her children. Why compound her anxieties by making her feel guilty?

Being told to "police" or "ban" their children's activities adds to family stress and undermines trust. In our survey of U.K. parents, a quarter said that screen time rules led to family conflict. Yet only around one in 10 clashed over what children actually do online. Parents would prefer to involve their children in making good decisions together, but they really want guidance.

As Melissa said of the internet, "We're all terrified about it for our own children because it seems something we can't stop, yet has so much ... I think it's not very good for your mental health." But like other parents, she doesn't know where to turn for advice about what content can be good for her children (and why), and what content is not.

Stuck between trying to prepare their children for a digital future and obey rules that don't fit the purpose, parents need support that respects their diverse circumstances, builds confidence and competence, and inspires new possibilities.



Sonia Livingstone, Ph.D.
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WE MUST DESIGN TECH AND MEDIA PLATFORMS WITH KIDS IN MIND

As a native Californian and First Partner to the Governor of this Golden State, I see media and technology as engines that drive our economy and embody the creativity and innovation leading the world.

As a mom to four children, every day I see the impact of screens, social media, and access to a world of unfiltered information on the brains and behavior of the young people whose well-being is my first and most sacred responsibility.

I also know that millions of parents share my struggles and concerns, and that no challenge is too great for the ingenuity of California industry and entrepreneurs. So why not expect—in fact, insist!—that the technology shaping our world actually promotes the healthy development of all children who are not only exposed to it, but also increasingly dependent on it?

This year's COVID-19 crisis has made clear the preeminent role media and technology play in adolescents' lives. As this report points out, many online experiences are positive for children. And we have much work to do to ensure that all children, regardless of ZIP code or household income, have equal access to the benefits of digital connection.

But even as I have worked to deliver tablets to thousands of device-insecure children in California during the pandemic shutdown, as a mom, I can't ignore the reality in my home. Distance learning for my four kids this spring opened the floodgates to media and its adverse effects. What started with using Zoom and Gmail for homework assignments became internet searches bringing up age-inappropriate information—and misinformation.

All of a sudden my eldest were sneaking off to their rooms, or hiding devices under their beds at night. I specifically saw the direct cause and effect between violent video games and aggressive behavior in my son. And I know I am not alone. Boys and men continue to be the largest perpetrators of violence in our society, despite all societal efforts to raise generations of children that are healthy and whole.

This report identifies a correlation between adolescent girls' social media use and their mental health. If that's because girls turn to social media for self-actualization and peer interaction, we need to address social media use from a public health perspective. If the suicide rate for girls age 10 to 14 has tripled since 1999, with 12.5 percent of African American girls and 10.5 percent of Latina girls in high school having attempted suicide at least once in the past year, what clearer way do our girls have to tell us that they are suffering?

In a world where 1 in 5 American adolescents is receiving treatment for mental disorders, why wouldn't we design tech and media platforms with those risks in mind? As the pandemic has demonstrated, media and tech are part of our social safety net, virtually a public utility. Shouldn't we expect that these public utilities of the 21st century seek to be a positive force in child development?

With stakes this high, why wouldn't we have children's well-being driving the technology itself? Why is this burden always on the shoulders of parents (even though most also have jobs and other responsibilities besides managing their kids' technology use) and then the unmeasured changes in their kids' social and emotional well-being?

As a mom and a Californian, I want to hold to account these two powerhouse industries. I want them to be true partners in understanding how their technologies and content are affecting our children, and how we can ensure healthier media consumption for all. Imagine the upside if social media and information technology were developed expressly to nurture and support our world's children. That's something I look forward to.



Jennifer Siebel Newsom
First Partner of California

THE BURDENS OF THE LATINX FAMILY

The school calls and a Latinx parent hands the phone to their child so they can translate. A burst of Spanglish and a second-generation Latinx parent feels the burden of teaching their child to be bilingual and bicultural. A parent says “no” to prom because that’s not as important as a family event. These are examples of the many experiences of Latinx families in the United States. The diversity of Latinx families challenges many well-meaning professionals. We have to approach parenting, media, and mental health from different perspectives in order to be effective.

Latinx families often avoid services due to the lack of ready access to information and mental health practitioners knowledgeable in their cultural and linguistic experiences. This lack of trust that professionals will hold their culture and language in mind can be a factor in the suicide rate among adolescent Latinx females. The school can become the bridge between the two cultures, rather than placing that burden on the teen or parent to find help. Recently migrated Latinx families need someone to facilitate relationships with the teachers and adults in their children’s lives. Community building is important for the Latinx parent used to solutions coming from a collective point of view.

In multigenerational Latinx families, the media does not offer the family a way to celebrate their bicultural experience. Parents and teens have to choose between media that is entirely Spanish or entirely English and rarely see the multicultural experiences they live. There is a gap in representation. Not seeing yourself in popular culture can create a burden in the development of the self, particularly in adolescence. Among Latinx females in multigenerational families, this questioning of who they are and who they wish to be without seeing themselves in culture adds to other burdens, like depressive or anxious responses, body image issues, and the pressures of the future. We need to study the effects of being bicultural and the lack of representation for the Latinx teen and parent. This can give us better ways to approach this community and reverse this disheartening statistical rise in suicide among Latinx females.

Ambiguous thoughts around their Latinx culture and the dominant “American” culture is another factor. Losing their child to the dominant culture through acculturation creates family conflict in recently migrated families. Many factors contribute to the increase in suicide and suicidal ideation among Latinx females, but in the Latinx community, the rift between parent and child due to the acculturation question is a dominant one. In a recently migrated family, a teen may be accused of rejecting their family or home country if they express attitudes considered American. An adolescent who is naturally asking, “Who am I, and who do I want to be?” may feel stuck in accepting the self and betraying the family. For some, this becomes reason to give up and annihilate the self.

The Latinx parent in the United States has all the typical questions about normative development, academics, and emotional growth, but they can never leave out the acculturation questions or cultural and linguistic aspects of their child’s experience. Since they can’t, neither should researchers, schools, media companies, policymakers, or mental health professionals who work with Latinx families. We all need to be mindful of their burdens.



Lina Acosta Sandaal, MFT
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development expert*

FINDING PEACE DURING THE PROTESTS: DIGITAL WELLNESS TOOLS FOR BLACK GIRL ACTIVISTS

The growing use of social media as a platform for social justice activism has illuminated both the promise and the perils of social media for Black teens. On the one hand, teen-led campaigns, like #BlackLivesMatter and #SayHerName, have shed light on the prevalence of racist violence and police brutality against Black Americans. On the other hand, the hypercirculation of graphic murder content has resulted in significant increases in anxiety and depression among Black teens. The complexity of social media to act as both a vehicle for transformative change offline and a conduit of racially traumatizing content online raises some important questions. Namely, how are Black teens surviving these complicated digital spaces? And are they using social media in ways that support communal coping and digital wellness?

I began researching how Black girls handled the influx of racial violence on social media well before this current moment in the Black Lives Matter movement. My dissertation, which focused on the mental and emotional consequences of witnessing viral Black death and dying, was inspired by my own struggles with mental health following the killing of Philando Castile in 2016. This qualitative study, conducted over six years, centers around the voices of 17 Black girls (age 18 to 24) from across the United States and Canada. Their stories provide critical insights into how social media may be used now by Black teens to cope with and heal from racial trauma they are experiencing both offline and online.

The psychological trauma of witnessing Black death and dying online was immeasurable for the girls in this study. Bre'anne captures Black girls' collective trauma, stating, "We all have PTSD ... because of social media, because of all this constant coverage, we have this fear of the police. Emotionally, I can say that it has taken a toll on me. It's taken a toll on all of us." In order to cope with the stress and fatigue of witnessing racialized violence on social media, the girls in my study engaged in three types of wellness activities online:

Experiencing Black joy and laughter

Participating in digital spaces focused on collective healing through joy, art, and laughter was a popular means of coping for the girls in my study. Iyanah shared, "Black Twitter is so great ... it feels like a community space you can go and laugh or grieve or just connect with the rest of the Black community." Danielle echoed these sentiments, stating, "People on Twitter are just funny ... I can just sit there and just laugh for hours. Especially if I'm feeling bad." Whether it's following a "clapback" thread on Black Twitter, laughing at internet memes and GIFs, or having a digital hangout with a couple friends, engaging in intentional acts of Black joy was a crucial part of healing.

Unplugging for rest and restoration

The study participants also emphasized the need for rest and restoration, especially for Black girls that see themselves through the lens of the "strong Black woman." Diamond stated, "as much as [racial justice] dialogue is important sometimes, it's really important to just tune out and just not have to do that labor." Rather than participate in racialized social media conversations all the time, the girls in this study suggest temporarily "unplugging" and engaging in restful activities like aromatherapy, napping, or participating in culturally relevant sound baths (a type of a guided meditation using music and imagery to reduce racialized stress).



Tiera Chanté Tanksley, Ph.D.
*Postdoctoral scholar, UC Irvine
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Finding sources of communal coping and social media therapy

In addition to disengaging from social media (even if just temporarily), the girls simultaneously stressed the importance of accessing race-conscious mental health resources online. They sought out the social media pages of organizations that focus on Black mental health, such as Therapy for Black Girls (@therapy4bgirls) and Sista Afya (@sistaafya), which offered insights, resources, and activities they could use to cope as an individual.

They simultaneously expressed the importance of finding community when coping with racist trauma. Recognizing how the open internet was often a violent and racially hostile place for Black girls, the participants often created private, invitation-only affinity spaces where they could discuss racial violence in safe and communal ways. Alleyah, an avid proponent of private affinity spaces online, noted, “I’m in a bunch of Black student union pages and a bunch of artist pages and a bunch of Black artist pages. A bunch of little mini-communities of resistance, I guess.”

Although the perils of social media for Black youth remain high with repeated and graphic exposure to racialized violence, my research shows that Black girls are nevertheless finding incredible ways to reclaim and recreate digital safe spaces that allow for joy, restoration, and healing from racialized trauma online. It is critical that we—as teachers, researchers, and caring adults—continue to help teens navigate social media in ways that foster digital wellness and insulate them against racialized trauma both on and offline.

OUR KIDS ARE WALKING AROUND WITH SLOT MACHINES IN THEIR POCKETS

You'll see a lot of things in Silicon Valley that you won't see in the rest of the country. But there's one thing you won't see there that's become commonplace everywhere else—children on smartphones. The creators of the technologies and social media apps that are dominating an ever-enlarging portion of our children's lives are often the ones who are most wary of giving their children access to them.

That's all you really need to know.

As Tristan Harris, a former design ethicist at Google, says, we're all walking around with slot machines in our pockets. We don't let our children into casinos; we should be just as wary of letting these casinos into our children's hands.

As a father of two young boys, I constantly worry about the negative impact of these technologies on our children. When I think back to my childhood, I remember riding my bike to a friend's house and then exploring the woods. My kids spend their time staring at a screen. And they're not alone—more than half of all children age 8 to 12 have their own tablet, and a quarter of them have their own smartphone.

Instead of meeting with their friends in person (and developing social skills), teenagers obsessively refresh their posts to see how many likes they received. And current research shows worrying effects: Overuse has been found to contribute to obesity, sleep deprivation, posture issues, stunted social skills, and blurred lines between real and virtual relationships. There has been an unprecedented surge in depression, anxiety, and suicide as well as a marked decrease in sociability, particularly in teenage girls. All this at a time when the pandemic has forced our children online even more for school and to see their friends and family.

Video games and screen time are what's known in economic terms as an inferior good—the poorer you are, the more of it you consume.

Right now, the interests of parents are directly at odds with the interests of the technology companies. They're monetizing our attention and profiting off of our time. As they say, the addictive nature of smartphones is a feature, not a bug. We parents are outgunned and at a total loss.

Unfortunately, our government is completely unequipped to be a part of the solution. The Office of Technology Assessment, which was responsible for ensuring Congress was informed on these issues, was dissolved in 1995. Recent hearings with tech CEOs, including Mark Zuckerberg, showed that our leaders don't understand even the basics of how social media works. Many of our leaders refuse to use Zoom and have never read their own emails. The private sector salaries for experts in this area dwarf what the government offers, ensuring that the information and expertise will lie far from Washington.

This is a fundamental problem of our time and one that we won't have full insight into until well after the worst effects are felt. We need an informed government with relevant expertise to combat the excesses of tech companies and, when needed, keep them in check so these new technologies are developed in a way that maximizes children's health and education, not company profits. I'm optimistic that we can quickly build consensus on these issues as many parents in Silicon Valley are realizing their importance.



Andrew Yang
Founder, Humanity Forward

We need to “upgrade” the operating system of our government. Let’s bring back the Office of Technology Assessment to ensure that Congress gets information on these issues from experts who are not being paid by the tech companies. And let’s bring real thought and resources to how the “attention economy” can be properly regulated with human interests in mind, including an agency dedicated to this continually evolving set of issues.

Let’s pour money into the CDC and NIH to fund research on the health effects of these devices and apps on our children. We need to develop guidelines (and regulations, if needed) on design features. For example, we can remove autoplay features for young children and endless scrolling on social media apps and cap the number of notifications or recommendations per day.

We managed to incentivize the production of high-quality educational content on TV, and we should do the same on YouTube and other platforms. Why are children forced to watch ads before their latest Fortnite video instead of a brief history lesson?

We should change our curricula in public schools to include mindfulness, responsible use of technology, and critical thinking so our children can assess the information they come across online. We should have screen-free periods of time. These are just some of the ideas that we need to explore.

Many with professional experience in the industry describe the work they’ve done in stark terms. They say that the smartest minds of a generation are spending their time getting teenagers to click on ads and obsess over social media posts. They’re also preventing their own children from facing the negative effects.

In short, many experts are worrying that the widespread adoption of a poorly understood technology has caused mental health and developmental problems for an entire generation. The data shows that these concerns are playing out before our eyes. We shouldn’t just accept that our kids aren’t all right—let’s do something about it.



KEY FINDINGS

THE UNPRECEDENTED SHOCK OF 2020 threatens the mental health and future of this generation of adolescents—the most diverse cohort in U.S. history. Among adolescents age 10 to 19 years old, 1 in 2 are living either in poverty or in lower-income households, and have come of age in the aftermath of the Great Recession. This generation has also grown up against a backdrop of rising income inequality, school shootings, and an opioid epidemic as well as painful struggles to end racism, sexual violence, and discrimination around gender and sexual identity. Now adolescents face a pandemic and the onset of a second major economic downturn in their young lives.

1. Digital media and tech can and should be a social safety net right now.

But similar to other social safety nets, many of the most vulnerable adolescents are unable to reliably access and receive support in digital spaces. Household socioeconomic status is one of the most powerful factors shaping both adolescents' online experiences and their mental health. Adolescents growing up in lower-income households not only have less reliable devices and means of connecting to online spaces, they also tend to receive less supervision, support, and scaffolding in their online activities, and report more spillover of negative online experiences. The coronavirus pandemic has shone a bright light on existing inequalities, and solutions will need to overcome the deep social and digital divides that enable some adolescents to benefit online, while putting many others at risk of being left further behind.

2. Rising depression and risk of suicide among adolescents— young girls in particular—was already a cause for deep concern among parents and mental health providers prior to the pandemic.

Suicides had been increasing among every age group in the United States, but rose most steeply among 10- to 14-year-old girls, with a rate that tripled between 1999 and 2017. Adolescents of color are especially vulnerable: 12.5% of Black and 10.5% of Latina adolescent girls in grades 9–12 reported having attempted suicide at least once in the past 12 months, as compared to 7.3% of White females and 9.8% of Black, 8.2% of Latino, and 6.1% of White male adolescents, respectively.

3. Screen time, and more recently social media use, has been repeatedly identified as a potential cause of adolescents' worsening mental health symptoms.

This claim is uncertain, but recent meta-analyses and narrative reviews reveal a mix of small positive, negative, and mostly neutral correlations between both screen time and social media use and adolescents' mental health. Identified associations are small, accounting for less than 1% of the differences between adolescents, and offer no way to separate cause from effect. The failure to find a simple cause of the increase in adolescent depression and suicides is not surprising, given that mental health disorders emerge from a complex set of social, genetic, and experiential factors, which have varying influence across development and situations.

4. Social media emerges as a correlate of worse mental health more frequently among adolescent girls, but the direction of influence is uncertain.

Longitudinal studies are limited, but new research shows that (for girls only) early mental health symptoms predict later social media use patterns, but that social media use does not predict later symptoms. No linkages in either direction are found for boys. Associations for girls are small, explaining only 2% of the variation in later social media patterns, but these findings do not support claims that social media is a precursor of mental health symptoms among adolescents. More research is needed, including experimental and longitudinal studies that can test whether different subgroups of adolescents (such as girls or those with existing mental health and socioeconomic vulnerabilities) are at heightened risk or may benefit from additional safeguards in online spaces.

5. Adolescence has always been a critical time to focus on mental health as at least 1 in 5 adolescents are severely impacted and early detection may prevent future suffering.

Most adults (75%) with a psychiatric disorder report symptoms that began before age 18 and symptoms of serious mental disorders, (such as depression), often first emerged in adolescence. In 2000, a nationally representative face-to-face assessment of 13- to 18-year-olds showed that 22% of adolescents met diagnostic criteria for *a mental disorder with severe impairment* across their lifetime. Over the past 15 years (2005–2018), 1 in 5 adolescents have consistently reported receiving counseling or treatment for mental disorders; however, the types of mental disorders have shifted due to decreases in externalizing disorders (e.g., substance use and conduct disorders) and increases in internalizing disorders (e.g., depression and anxiety).

6. Most conversations about adolescents and social media have referred to “teens” as a uniform group, but online practices, risks, and opportunities vary across adolescence.

Early adolescence (age 10 to 14), is an especially important period to focus on as mental health symptoms often first emerge and many adolescents begin to use social media frequently. Offline risk often precedes and marks online risk, as young adolescents with existing mental health vulnerabilities report more negative online experiences and patterns of social media use that may be potentially more harmful. Adolescents who are especially sensitive to social evaluation, who may have “low” status offline, and/or a history of victimization or bullying may have unique vulnerabilities as they transition into online spaces. At the same time, some populations of adolescents’ who are marginalized in offline spaces, including LGBTQ teens, often report distinct benefits from supportive online communities.

7. Conversations around screen time are changing as adolescents have been quickly moved online to meet all of their educational and social needs.

Screen time is increasing as adolescents move online to meet virtually all their educational and social needs. Flipping the script on screen time to focus on *how* versus *how much* digital technology is being used has always made good sense, as counting hours does not distinguish between very different types of online experiences. This change is especially important now as time online needs to be tailored to meet basic and critical educational and social needs of adolescents.

8. Conflict over screens is common in families and, in many cases, this conflict is likely to be more harmful to adolescents' mental health than screen time itself.

Increased family conflict is a known contributor to mental health symptoms among adolescents, particularly among adolescent girls, whereas screen time is not. This is not to say that screen time should be unlimited, or that there are no adverse impacts of spending too much sedentary time online. But again, *how* adolescents use screens, versus the time they are spending on them, should be the focus for families.

9. Adolescents are increasingly going online to seek information and support related to mental health.

Unfortunately, the majority of digital mental health tools have not been designed with adolescents in mind. This is a missed opportunity particularly during the COVID-19 crisis as digital contact becomes one of the main ways for counselors and other mental health professionals to reach adolescents. Collaborations between mental health providers, developers, educators, parents, and adolescents are required to test whether digital tools can be used safely to detect distress, deliver evidence-based treatments, and extend the reach of existing services. Ideally, these tools could also be used to deliver just-in-time interventions to the adolescents most in need, when they are needed.



CONCERNS ABOUT ADOLESCENTS' MENTAL health and digital technology use were already high before encountering the new and global challenges of 2020 that will define this generation. Almost overnight schools, peer networks, workplaces, and communities were pushed online. Systemic racism has exacerbated existing inequities, including health and safety concerns for the Black community as well as other communities of color. Record levels of unemployment have been registered, and economies worldwide have ground to a halt. A review of both history and developmental science tells us that families with children will be hit hardest by these types of economic downturns, and that the mental health and well-being of many adolescents are likely to suffer as a result.

In the months and years leading up to the coronavirus pandemic, adolescents (defined throughout this report as young people age 10 to 24), were reporting increased symptoms of depression, anxiety, and suicide risk. Parents, educators, and mental health professionals were struggling to respond to these increases. Now, the combination of a pandemic, economic downturn, civil unrest/police violence, and school closures is placing additional pressures on the mental health of adolescents and the adults that teach, parent, and support them.

Concerns about screen time and social media were high as we entered this crisis. Now, in an unprecedented turn of events, virtually all adolescents have been directed online to meet their educational and social needs. Now more than ever, there is a need to flip the script around screen time from concerns over time spent online to how to safely connect adolescents to their schools, peers, family networks, and communities while also curating quality content and ensuring guardrails are in place. It is too early to evaluate the impacts of this rapidly unfolding natural experiment on the nation's adolescents. However, how this generation emerges from this crisis may depend on whether core features of their social and emotional development can be supported online, using digital tools.

To understand how we can best support adolescents and develop guardrails for the future, we generated the *Tweens, Teens, Tech, and Mental Health: Coming of Age in an Increasingly Digital, Uncertain, and Unequal World* research report. This report synthesizes what is known about adolescents' mental health and its associations with digital technology use. Assumptions about how digital tech use influences adolescents' mental health are checked against findings generated using different methodologies (surveys, experiments when available, and digital tracking). Well-established principles and practices for supporting adolescents are applied to identify those who may be most vulnerable, signal when parents should be concerned, outline what stakeholders can do to help, and describe how digital spaces can be shaped to support adolescents in an increasingly digital world that is both unequal and uncertain.



A GENERATION COMING OF AGE IN “CRISIS”

IN THE MONTHS LEADING up to 2020, adolescents were already described as being “in crisis.” Disturbing evidence was mounting that adolescents’ symptoms of depression and anxiety were increasing and that more young adolescents, particularly girls age 10 to 14, were ending up in emergency rooms and at risk for self-harm (Keyes, Gary, O’Malley, Hamilton, & Schulenberg, 2019; Mojtabai, Olfson, & Han, 2016). Loneliness was also a cause for concern as it peaks in adolescence (Luhmann & Hawkley, 2016; Matthews et al., 2019) is linked to a wide range of negative health outcomes (Leigh-Hunt et al., 2017) and has been increasing since 2011 among U.S. adolescents (Twenge, Spitzberg, & Campbell, 2019).

The search for explanations for increases in symptoms of serious mental health disorders, like depression and anxiety, have churned through a host of potential factors, ranging from increased academic pressures and unrealistic gender role expectations to growing income inequality, racial/ethnic discrimination, and persistent impacts of the Great Recession in 2008 that disproportionately impacted families and adolescents of color.

Downstream impacts of “diseases and deaths of despair” starting in 2010 has also been cited as a potential cause, as it has worsened mental health and lowered life expectancy at the population level. Diseases of despair refer to the dramatic increases in drug overdoses, suicide, and alcohol-related diseases since 2010 and concentrated among working class and middle-age adults in the United States who perceive their social and economic future as weak (Case & Deaton, 2020). Although a long list of potential causes has been generated (Livingstone, 2018), increases in screen time and social media during the same period has been repeatedly cited as contributing to adolescents’ worsening mental health (Twenge, 2020).

Before describing linkages between adolescents’ mental health and their use of digital devices and social media, it is helpful to try to get a sense of this generation by reviewing the major events that have shaped their lives thus far.

The rapidly changing face of adolescents in the United States

There are just under 64 million 10- to 25-year-olds in the United States. They represent the most culturally and racially/ethnically diverse cohort in U.S. history. Just over half of U.S. adolescents identified as White in 2016. However, that percentage has been changing rapidly, and by 2050 the proportion of adolescents who identify as White is predicted to drop to 40% as Latinx and multiracial adolescents come to represent a larger share of the population (U.S. Census Bureau, 2017). Approximately 1 in 4 children younger than 18 in the United States are classified as first- or second-generation immigrants, which has increased 51% between 1994 and 2017 (Child Trends, 2018).

This is also one of the most digitally connected and educated cohorts we have seen, with 95% of adolescents age 13 to 18 in the United States reporting they have at least one mobile device of their own (Rideout & Robb, 2018), and high school graduation records reaching a record high of 85% in 2018 (U.S. Department of Education, 2019).

Defining adolescence

Adolescence is a period of rapid biological, social, and emotional changes. It is considered one of the most important developmental periods that humans, along with other species, go through (Dahl et al., 2018). Adolescents are now defined as young people age 10 to 24 (Sawyer et al., 2018).

Adolescence has been getting longer as children enter puberty at an earlier age and delay transitioning into the adult roles which have traditionally marked the end of adolescence (e.g., completing school, transitioning to work, child-rearing).

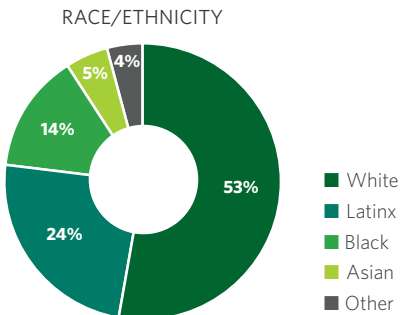
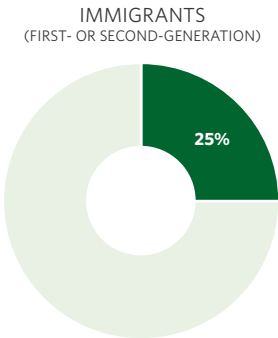
Stage	CSM Terms	Ages
Early adolescence	Tweens	8 to 12
Middle adolescence	Teens	13 to 18
Late adolescence	Young adults	19 to 24

FIGURE 1. Changing face of American adolescents growing up in an increasingly digital, uncertain, and unequal world

By the numbers **64 million** 10- to 25-year-olds

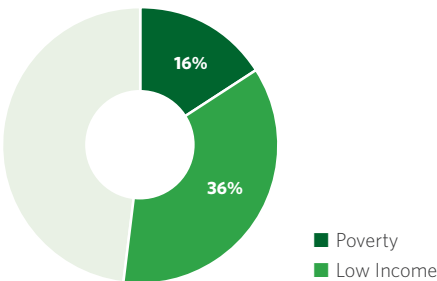
Diversity

1 in 4
younger than 18
are first- or
second-generation
immigrants

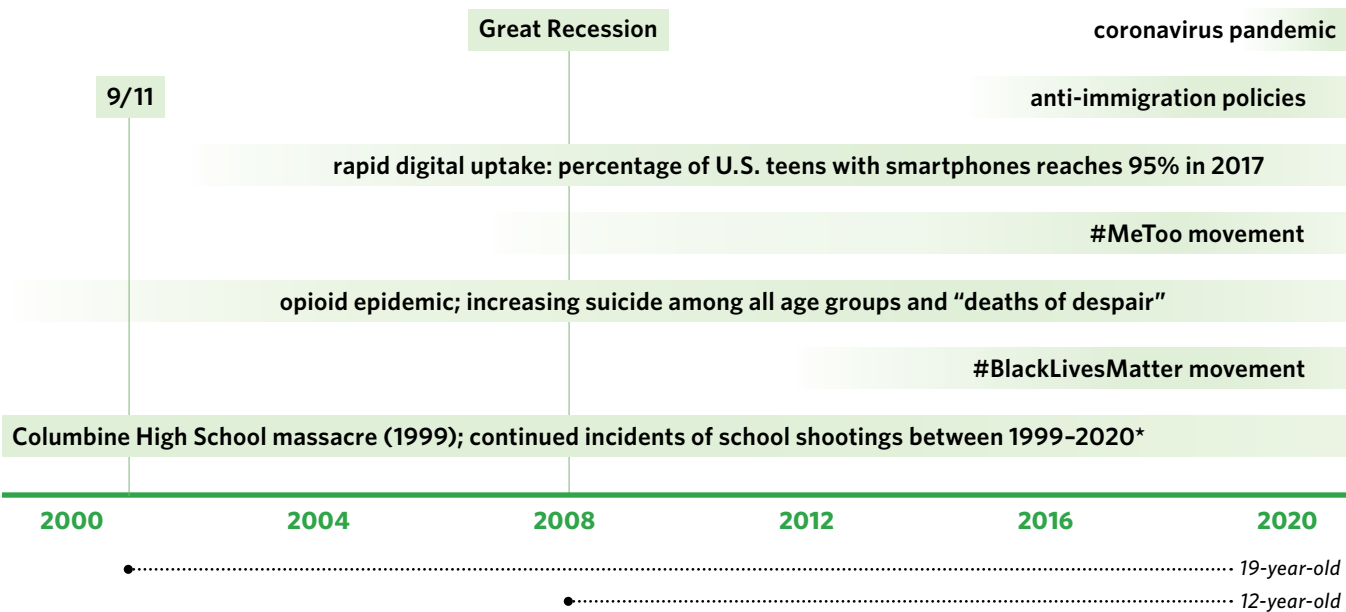


Economic adversity

1 in 2
age 10 to 19
are living in
poverty or
low income



What adolescents have lived through so far: A rapidly changing economic, societal, digital, and cultural landscape



Notes: Immigration data source: Child Trends (2018); Race/ethnicity data source: U.S. Census Bureau (2017); Poverty data source: U.S. Census Bureau (2018).

*<https://www.chds.us/ssdb/incidents-by-year/>

In short, this is one of the most diverse, educated, and digitally connected generations of adolescents this nation has ever seen.

Unfortunately, children and adolescents in the United States have always been more likely than adults to live in poverty, and this is also true today. In 2017, more than 1 in 3 adolescents lived in a low-income household (defined as less than twice the federal poverty line), with an additional 1 in 6 adolescents living below the federal poverty line (defined in 2018 as a family of four living on \$24,600 or less) (U.S. Census Bureau, 2018). By comparison, approximately 12% of adults in the United States live below the poverty line. In the wake of the coronavirus pandemic, these numbers are likely to increase as economic downturns hit families with children the hardest. They are also the least likely to experience economic gains when the economy begins to recover (Duncan & Murnane, 2011).

The fact that 1 in 2 adolescents are growing up either below the poverty line or in lower-income households is critical to consider, as household socioeconomic status is one of the best predictors of current and future mental health. Adolescent poverty has a “long reach” and often carries effects that can be detected years and even decades into the future (Duncan & Magnuson, 2013). Household socioeconomic status also heavily stratifies the type of access adolescents have to digital devices, online safety, and opportunities and supports in digital spaces.

Coming of age in an increasingly digital, unequal, and uncertain world

Adolescents today have already spent much of their young lives exposed to economic, societal, and cultural turmoil. Those turning 12 this year were born into the Great Recession and, as the economy recovered, spent their childhoods growing up against the backdrop of an opioid epidemic, school shootings, increasing economic inequality as well as painful conflicts and violence around discrimination related to gender, sexual identity, and race.

Their older peers, turning 19 this year, were born into the aftermath of 9/11 and the Columbine school shooting and were approaching adolescence as the Great Recession hit. All adolescents today are growing up against the backdrop of rapid technological advancements—named the Fourth Industrial Revolution by the World Economic Forum—marked by the widespread adoption of the iPhone, artificial intelligence, and digital technologies that are fundamentally changing the way that we live and work (Schwab, 2017).

Adolescents’ developing brains and bodies are primed to adapt to their environments and are shaped by both biology and these rapidly changing economic, social, cultural, and technological dynamics. Now, adolescents and their families are facing a once-in-a-century pandemic and the onset of a second major economic downturn in their young lives. While many look back on the past decade as a period of economic growth and prosperity and low rates of unemployment, the reality for many American families instead reflects a period of growing economic inequality and uneven recovery that impacted households with children and of color most severely, and left many families in precarious positions as the COVID-19 crisis hit.

Similar to the racial/ethnic disparities in the impacts of COVID-19 infections and deaths, impacts of the Great Recession were felt most acutely by Black and Latinx households, where median wealth declined by 529% and 425%, respectively (versus 38% in White households) (Percheski & Gibson-Davis, 2020). Since 2008 there has been an uneven recovery that has been most pronounced among families with children and has further amplified wealth gaps by race/ethnicity to the point where in 2016 Black households with children had 1 cent of median wealth for every dollar held by non-Hispanic White households with children (Percheski & Gibson-Davis, 2020).

The socioeconomic context is critical to any discussion of adolescents and digital technology use because poverty and economic resources impact both adolescents' mental health and stratifies their digital device access and online experiences. While the gap between adolescents from lower- versus higher-income households with respect to access to a mobile phone has narrowed (George et al., 2020), millions of U.S. adolescents still lack reliable access to high-speed internet or the types of devices needed to fully engage with remote learning (Fazlullah & Ong, 2019).

The socioeconomic context is critical to any discussion of adolescents and digital technology use because poverty and economic resources impact both adolescents' mental health and stratifies their digital device access and online experiences.

Similarly, household socioeconomic status often influences how digital technologies are tailored and supported. For example, adults who use computers regularly for work may be better positioned to connect their adolescents with Google Classroom and personalize their child's online experiences in ways that benefit learning, as compared to parents or caregivers with lower levels of comfort and experience with digital technologies.

Similarly, the type of device can also influence what young people can produce or create online, with more complex and self-directed content creation possible on laptops versus shared mobile devices. One large multisite study found that young adolescents, (age 9 to 16) in lower- versus higher-income households tended to receive less support from caregivers with respect to online skill development and safety (Mascheroni & Ólafsson, 2014). In a second study, young adolescents (age 10 to 14) were more likely to report spillover of negative online experiences to offline fights and conflict at home and school (Odgers, 2018).

Prior to the coronavirus pandemic, adolescents from lower-income households were spending, on average, more than one and a half hours, and in some cases close to two hours more, per day with screen media (George et al., 2020; Rideout & Robb, 2019), and engaging in different types of activities than their peers from higher-income households (e.g., more passive viewing of media and less engagement around online research and learning) (OECD, 2016). Now, as adolescents are moved online for their educational and social needs, it is critical to close this "new" digital divide, whereby adolescents from lower- versus higher-income households have not only less access, but also fewer supports and opportunities to succeed in a digital world (Common Sense Media, 2020). Household socioeconomic status both increases adolescents' risks for mental health symptoms and stratifies their opportunities in online spaces.

THE STATE OF ADOLESCENTS' MENTAL HEALTH IN THE UNITED STATES

Mental health problems among adolescents are not new, nor are they rare. The National Comorbidity Study in 2001–2002 was one of the first nationally representative face-to-face assessments of the prevalence of mental disorders (anxiety, mood, behavioral, and substance use) among U.S. adolescents ($N = 10,123$). Results illustrated that more than 30% met the criteria for an anxiety disorder, 14% for a mood disorder, 20% for a behavioral disorder, and 11% for a substance use disorder, with approximately 22% of adolescents (age 13 to 18) meeting diagnostic criteria for a *mental disorder with severe impairment* across their lifetime (Merikangas et al., 2010).

Since that time (2005–2018), a relatively constant percentage (20%) of adolescents reported receiving mental health treatment or counseling across a broad range of settings. Changes over this period involved fewer adolescents suffering from and receiving treatment for externalizing disorders (substance use, conduct problems) and increasing numbers of adolescents seeking and receiving treatment for internalizing disorders (depression, anxiety) (Mojtabai & Olfson, 2020).

What do we mean when we say mental health?

Mental health includes aspects of emotional (happiness, satisfaction), psychological, and social well-being (such as belonging and contributing to a community). In this report, we focus mainly on adolescents' *reported symptoms of depression, anxiety, loneliness, and (at the extreme end) self-harm and related behaviors because these are costly, rising among adolescents, and likely to be impacted by the global pandemic*. But focusing on only mental disorder or the absence of pathology does not tell the full story of contemporary adolescents' mental health in the digital age. Positive dimensions of mental health—including happiness, social connectedness, and access to supportive relationships and communities—must also be considered. Many of these aspects of mental health are referenced in this report, but require much closer examination to fully understand how they relate to adolescents' social media use and trajectories of mental health emerging from the coronavirus pandemic.

There is also good news related to adolescents' mental health. Over the last three decades, adolescents' violent behaviors, alcohol use, and smoking (with the exception of vaping) have all declined alongside reductions in other costly health-risk behaviors, including risky sexual behaviors and teen pregnancies. There has been speculation that these positive trends are linked to the rise in electronic media (Arnett, 2018). These steady declines over the last 30 years have resulted in a cohort of adolescents who fare much better than prior generations across multiple indices of costly behaviors, but more recently are reporting increasing depression, anxiety, and loneliness.

Symptoms of mental disorders are relatively common among adolescents, and this was true long before mobile phones were placed in their hands. The vast majority of mental disorders first start in childhood or adolescence, and approximately 75% of adults who have a serious mental disorder as an adult first exhibited symptoms before age 18 (Kim-Cohen et al., 2003). Adolescence is also a critical period for early detection and intervention, as children whose mental health symptoms persist across adolescence carry the highest burden of disease and consume the most health and social services as adults (Rivenbark et al., 2018). So although specific concerns about increasing depression, anxiety, and suicide among adolescents' have been raised in recent years, adolescence has always been a time when mental disorders are common and early intervention has been deemed essential.

Although mental health symptoms during adolescence are not new, heightened concern has been driven by rapid increases in both depressive symptoms (Keyes et al., 2019) and suicidal behavior (Hedegaard, Curtin, & Warner, 2018). The percentage of U.S. girls age 12 to 17 reporting depressive episodes increased by more than 4 percentage points between 2005 and 2014, to 17.3%.

The proportion of boys doing so in 2014 was 5.7%, a rise of 1.2 percentage points since 2005 (Mojtabai et al., 2016). Deaths by suicide have increased among every age group in the United States, but have been especially drastic among girls, with a four-fold increase in the suicide rate among 10- to 14-year-old girls from 1999–2017 as shown in Figure 2. In 2018, 206 female and 390 male adolescents age 10 to 14 died by suicide. In total, 1,428 female and 5,379 male adolescents between the ages of 10 and 24 years are reported to have died by suicide in 2018. More broadly, between 2007 and 2017, the number of suicides among people age 10 to 24 increased 56 percent, from 6.8 deaths per 100,000 people to 10.6 (Twenge, Cooper, Joiner, Duffy, & Binau, 2019).

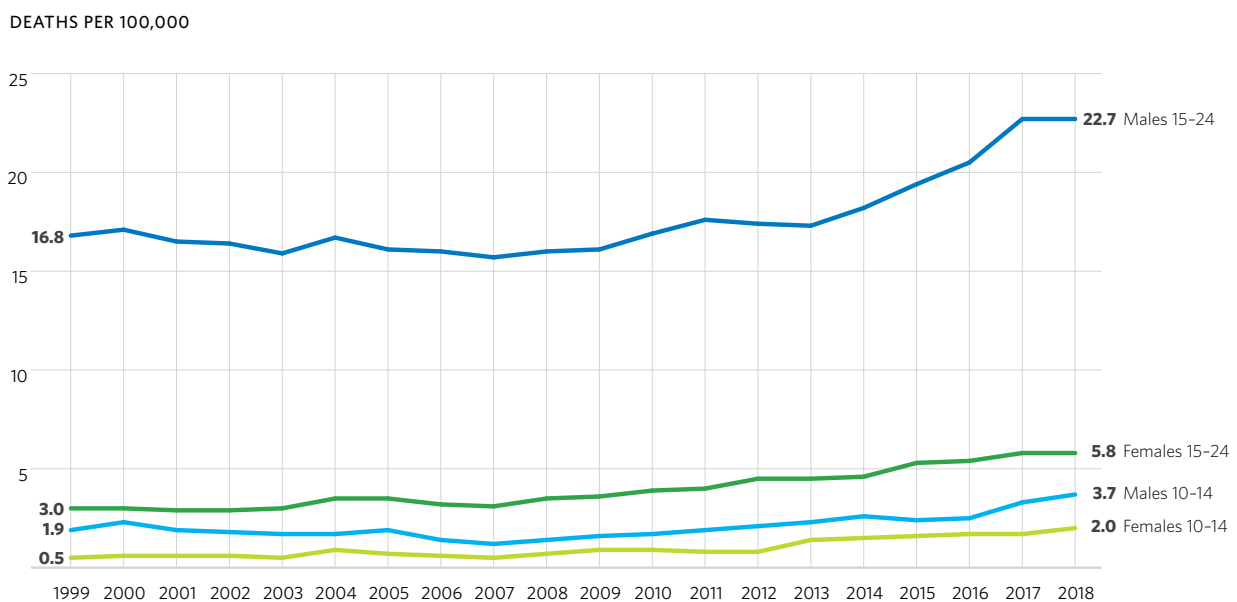
Rises in young girls' digital technology use and depression and suicide since 2012 in the United States has led to claims that digital technology may be to blame, at least in part, for increasing depression and suicide (Twenge, 2020). As discussed below, this possibility is critical to explore. Unfortunately, to date, there is little robust or causal evidence to support these claims. Instead, researchers, and subsequently parents and the public, have been left trying to make sense of results from correlational studies that offer no way to sort out cause from effect. That is, when associations are found, it is impossible to determine whether (a) young girls with depression are more likely to spend time on

social media, (b) social media causes depression and related behaviors, and/or (c) the two trend lines are moving together simply because other factors are driving both.

Rises in young girls' digital technology use and depression and suicide since 2012 in the U.S. has led to claims that digital technology may be to blame, at least in part, for increasing depression and suicide.

Ethnic and racial disparities in both the prevalence of mental health disorders and access to services are well documented among adolescents (Alegría, Green, McLaughlin, & Loder, 2015). Mental disorders reliably discriminate in their impact, and recent analyses suggest that adolescents of color are at heightened risk

FIGURE 2. Suicide rates for adolescents in the United States, by gender and age group, 1999–2018



Notes: Females 10–14: $n = 50$ in 1999, $n = 206$ in 2018; Females 15–24: $n = 575$ in 1999, $n = 1,222$ in 2018; Males 10–14: $n = 192$ in 1999, $n = 390$ in 2018; Males 15–24: $n = 3,326$ in 1999, $n = 4,989$ in 2018.

Source: <https://www.cdc.gov/healthyyouth/data/yrbs/pdf/2017/ss6708.pdf>.

for mood and anxiety disorders, with 39.0% of Latinx and 36.5% of Black versus 30.5% of non-Hispanic White adolescents age 13 to 18 meeting criteria for a mood disorder in a large representative national sample (Georgiades, Paksarian, Rudolph, & Merikangas, 2018). More young girls of color reported that they have attempted suicide, with 12.5% of Black and 10.5% of Latina adolescent girls in grades 9–12 reporting having attempted suicide at least once in the past 12 months as compared to 7.3% of White females (Kann et al., 2017). A similar pattern exists for males, with 9.8% of Black, 8.2% of Latino and 6.1% of White male adolescents, respectively, reporting a suicide attempt in the last year.

Mental disorders reliably discriminate in their impact, and recent analyses suggest that adolescents of color are at heightened risk for mood and anxiety disorders.

Historically, rates of suicide have been lower among Latinx populations; however, the last decade has seen a rapid and disproportionate rise in suicide and suicide ideation, largely attributable to increases among Latinas age 15 to 25 (Silva & Van Orden, 2018). Likewise, adolescents who identify as belonging to an ethnic minority or to a sexually marginalized group (e.g., LGBTQ teens) are more likely to report mental health risks (Office of Adolescent Health, 2018) and to be impacted by suicidality (Mustanski & Espelage, 2020). In 2017, over 23% of both male and female adolescents identifying as gay, lesbian, or bisexual reported a suicide attempt (Kahn et al., 2017). Adolescents from lower- versus higher-income households are also at increased risk for mental disorders (Odgers & Adler, 2018), with elevated risk among those with a childhood history of trauma and exposure to adversity (McLaughlin, 2016) and/or with a family history of mental illness (Thapar, Collishaw, Pine, & Thapar, 2012).

What should we expect going forward?

Prior to 2020, mental health professionals were tracking incoming data with the hope that anxiety and depression would plateau, or better yet, decline among adolescents. However, the trend lines in Figure 2 may not be the best predictor of what comes next with

respect to adolescent mental health. The coronavirus pandemic has been a powerful disruptor. Families are facing increasing stressors related to unemployment and economic uncertainty, and concerns about the mental health of adolescents more globally are rising as financial hardship and family conflict have been shown to increase risk for depression and anxiety (Wadsworth & Compas, 2002), especially among adolescent girls (Davies & Lindsay, 2004).

It is still too early to evaluate the lasting impacts of this crisis on family dynamics and adolescent mental health. However, one study in a large U.S. city following 690 low-wage workers in the service sector (50% of whom identified as Black and 20% as Latinx) revealed dramatic decreases in both job stability and mental health in the immediate aftermath of the closure of nonessential business in mid-March 2020 (Ananat & Gassman-Pines, 2020). School closures have raised additional concerns regarding the removal of critical supports that often buffer impacts of economic hardship for many adolescents, including access to food and mental health services (Lee, 2020).

So far adolescents appear to be spared from the most severe physical symptoms of COVID-19. However, unless we act to support vulnerable adolescents, the broader costs to adolescents and society are likely to be high. History has shown that the health of children and adolescents can be adversely impacted by economic recessions, like the Great Recession of 2007–2009 (Kalil, 2013; Rajmil et al., 2014), as well by disasters such as earthquakes, hurricanes, tsunamis, and terrorism (Wang, Chan, & Ho, 2013). For example, adolescents living in communities impacted by plant closures and large-scale job loss exhibit more self-harm behaviors following these events (Gassman-Pines, Ananat, & Gibson-Davis, 2014). Importantly, recovery from economic shocks is often uneven, and lower-income families often do not return to their pre-recession or disaster gains, while those at the highest levels of income distribution are likely to experience rapid recovery and growth (Duncan & Murnane, 2011).

Thus, the pandemic is likely to produce potentially lasting and substantial increases in both digital technology use and adolescents' mental health problems, but this does not mean that one trend is driving the other. As discussed below, the connection between digital technology use and adolescents' mental health, even under more "normal" circumstances, is unlikely to be that simple in terms of directionality or universal in terms of how all adolescents are impacted. To understand how adolescents' mental health and their digital technology use is related, it is critical to first understand what adolescents need to support their development more generally, and how these needs fit with the platforms, resources, risks, and opportunities present in the online world.



WHY ARE ADOLESCENTS ATTRACTED TO SMARTPHONES AND SOCIAL MEDIA?

ADOLESCENTS ARE AVID USERS of digital technologies, and a review of the core features of adolescence provides clues as to why. The defining features of adolescence also point to how digital technology use can be supported by caregivers, educators, policymakers, and large technology companies to increase opportunity and minimize risk.

First, peers assume increased importance during the transition to adolescence. Adolescents not only enjoy, but often crave and are highly responsive to, social interaction with their peers. Experiences become more biologically and socially rewarding when shared with peers (Blakemore, 2008), and the transition to adolescence is marked by an increasing awareness of social hierarchies and reactivity to social evaluation (Somerville, 2013).

On the positive side, social media platforms easily connect adolescents with their friends and provide immediate, novel, and often rewarding feedback. Social approval and affirmation can be provided quickly (e.g., likes, comments, or shares), and opportunities for social connection are increased. A recent review of 37 studies demonstrated that adolescents are using social media and digital communication to support core features of friendships that have always been present (e.g., discussing school, arranging offline meetups, and showing affection) (Yau & Reich, 2018). This is good news in that much of what we know about adolescents' friendships offline appears to generalize to their online friendships and communications.

On the positive side, social media platforms easily connect adolescents with their friends and provide immediate, novel, and often rewarding feedback.

On the negative side, adolescence is marked by heightened awareness and sensitivity to social evaluation, and social media platforms allow for negative feedback that is highly visible and cannot be quickly erased or forgotten. Most adolescents develop successful strategies for managing peer friendships and conflict over time in both online and offline spaces. However, given the heightened sensitivity to peer appraisal, adolescents who are especially sensitive to social evaluation, who may have "low" status offline (Nesi, Choukas-Bradley, & Prinstein, 2018), or who have a history of victimization or bullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014) may have unique vulnerabilities as they transition into and navigate online spaces.

In these cases, social media may amplify offline risks or create new ones (e.g., by increasing social distress, leading to low self-image, and in some cases even increasing the risk for online harassment) (Nesi et al., 2018). Adolescents with existing mental health and offline vulnerabilities engage in riskier online behaviors and are more likely to have negative experiences in online settings (Katz & El Asam, 2019). The still unanswered question is whether online experiences make a bad situation worse or simply serve as a mirror reflecting offline vulnerabilities.

While friends play important roles at all ages, friendships and the need to connect is a central organizing aspect of young peoples' lives (Denworth, 2020). Appreciating adolescents' *fundamental need* to connect with and to receive validation and acceptance from peers is one of the most helpful lenses for evaluating risks and opportunities for adolescents in digital spaces. Platforms that can maintain, strengthen, and in some cases expand friendships are a main draw of the online world. There is tremendous overlap between online and offline friendship networks, and much online communication is about "offline" activities and events. Adolescents were never going online to avoid their friends in real life (IRL). Instead, they are constantly going online to connect and communicate with them, often about offline activities and plans. In-person contact and interactions have always been needed—a fact that is painfully obvious now that we have seen what a mostly online world for adolescents looks like.

Second, adolescence is a critical period for identity development and finding ways to matter and acquire status. Online spaces can encourage identity exploration, foster artistic creativity, and in some cases provide gender-balanced opportunities for emotional expression (Prinstein, Nesi, & Telzer, 2020). Social media and online communities appear to have distinct benefits for young people who are excluded or feel stigmatized in their offline peer groups due to ethnic, racial, or gender or sexual minority status. Young people holding these identities report access to supports and resource sharing not available to them elsewhere (Ybarra, Mitchell, Palmer, & Reisner, 2015) and are likely to benefit from positive interactions and online supports (Ito et al., 2020). Social media and supportive online communities are likely to confer important and distinct benefits for adolescents who are excluded from or who may be otherwise marginalized offline.

Risks and opportunities will not be the same for all adolescents and will vary based on how social networking sites are used. The quality of the interactions will depend on both what adolescents bring to the online environment and how well they are supported in their families, peer groups, and larger communities (Livingstone, 2013). A common question is whether some social media platforms or applications are more harmful or more beneficial for adolescents. Among the platforms used most frequently, it is not about whether the app is “good” or “bad” for mental health, but rather how adolescents are using them and what they are bringing into the platform.

For example, a platform like Instagram may be potentially harmful for adolescents prone to rejection and body image disorders; while for the majority of adolescents, it provides a running reel of humorous images and pictures of friends and family. Likewise, many popular social media platforms, like TikTok, provide tools that allow for expression, creativity, and collaboration among peers and broader social networks, but may not benefit those who are isolated or who do not have friendships that support this type of engagement. Across all platforms, there are critical questions about adolescents’ privacy, ability to avoid harassment, and control and ownership over data; these are typically neglected or overshadowed by debates about negative impacts on mental health.

Across all platforms, there are critical questions about adolescents’ privacy, ability to avoid harassment, and control and ownership over data; these are typically neglected or overshadowed by debates about negative impacts on mental health.

Third, adolescence is a time of rapid biological growth and an optimal time for social learning (Blakemore & Mills, 2014; Fuhrmann, Knoll, & Blakemore, 2015). Adolescents’ brains are constantly optimizing to environmental inputs as they go through a process of synaptic pruning to strengthen pathways between key brain regions (Blakemore, 2008).

This increased neuroplasticity leads many to view adolescence as a “second window of opportunity” for influencing health-related behaviors ranging from nutrition, exercise, self-care, and now digital habits and health. Increased sensitivity means that experiences during adolescence—both positive and negative—may have greater impacts than those occurring at later points. With the largest population of adolescents (1.2 billion) in human history (Azzopardi et al., 2019) coming of age during the current pandemic, there is an increased urgency to ensure that risks are reduced and opportunities increased in both offline and online spaces.

Finally, during adolescence young people develop increasing independence and autonomy, while still remaining connected to and supported by caregivers. Parental monitoring and scaffolding is not something new to the digital age. Parents and caregivers have been tasked with this responsibility long before mobile devices and social media became a source of conflict in families. However, the increasing amount of time spent online requires new modes of supervision, support, and monitoring.

The good news is that many of the same core principles around building autonomy and independence can be extended into online spaces. The most effective parental support and monitoring strategies are those that strike a balance between clear boundaries and rules, with supportive scaffolding, trust, and positive and open communication. Similar to how parents and caregivers prepare children to navigate their day at school, participate in after-school activities, or spend time out with friends, adults need to monitor, check in, and communicate with children to keep them safe and supported in online spaces.

When possible, parents and caregivers can join their adolescents in online spaces. Engaging in shared online experiences provides firsthand knowledge of the risks and opportunities in the spaces where adolescents spend the most time. But as with the offline world, much of what is experienced will need to be communicated back to parents by teens, and this requires a level of trust and comfort in the relationship which typically cannot be replaced by coercive surveillance strategies or overly restrictive approaches.

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On a related note, conflict is a natural part of adolescent development as parents and their adolescents negotiate boundaries, rules, and independence. Conflict can be reduced by redirecting attention from how much time is spent online to asking whether time on screens is interfering with or supporting their offline needs and goals, including sleep, friendships, schoolwork, extracurricular activities, and exercise (Blum-Ross & Livingstone, 2018).

To summarize, adolescence creates unique challenges for caregivers, educators, and adolescents as they try to optimize opportunity while minimizing risk. The good news is that we already know a lot about adolescence and we can apply this knowledge to their behaviors and needs in online spaces. Given what adolescents “need” to support their social, emotional, and physical development and what social media platforms and the digital world offer, the strong pull of online spaces for adolescents becomes less mysterious.

The digital world has not created a new species of adolescents, but instead offers tools that support connections with peers, supportive online communities, and offers new ways to optimize social learning and gain increasing autonomy. At the same time, new risks related to privacy, exposure to negative content, and unhealthy patterns of technology use are introduced. Adolescents’ fundamental needs and goals remain unchanged across prior generations, but they now have access to new tools to express, exploit, and explore the world and their place within it. The challenge is to keep them safe and supported as they enter, explore and spend increasing time in online spaces.



WHAT DO WE KNOW ABOUT THE CONNECTION BETWEEN TECH USE AND MENTAL HEALTH BEFORE THE CORONAVIRUS PANDEMIC?

THE FACT THAT MENTAL health problems and digital technology use has increased together over the last decade has led to claims that screen time, and more recently, social media use is driving increases in mental health symptoms. For psychologists, parents, and educators, it could be a positive development if digital technology use was responsible for these increases because it would provide a specific and malleable target for intervention. Unfortunately, it is exceptionally rare to identify factors that are solely, or even largely, responsible for driving the onset and progression of serious mental health disorders like depression and anxiety. Mental health disorders are instead influenced by a complex set of social, genetic, and experiential factors, which vary in their importance across development and situations. Simply put, the causal story is never so straightforward, and caution is required when simple explanations are applied to complex problems.

What does the evidence say about the connection between smartphones, social media use, and adolescents' mental health?

Two large-scale reviews were completed earlier this year, and both converged on similar conclusions regarding the connection between adolescents' digital technology use and their mental health and well-being. The first review (Odgers & Jensen, 2020) integrated data from more than 50 studies and six narrative syntheses and meta-analyses (Baker & Algorta, 2016; Best, Manktelow, & Taylor, 2014; Huang, 2017; Keles, McCrae, & Grealish, 2019; McCrae, Gettings, & Purssell, 2017; Seabrook, Kern, & Rickard, 2016). Findings demonstrated that associations between adolescents' mental health and their use of social networking sites were inconsistent with respect to direction, small in size, and almost always reliant on correlational data or studies where third factors could not be ruled out. Almost none of the studies conducted with adolescents were experimental or able to test causal claims. That is, when associations were present, there was no way to determine whether social media use was driving mental health problems, or whether adolescents' mental health symptoms were leading to different patterns of use.

When associations were found, digital technology use typically accounted for less than 1% of the variation in adolescents' mental health, a finding that is consistent with a recent large-scale and pre-registered study that estimated associations across three large cohorts of adolescents ($N = 355,358$) (Orben & Przybylski, 2019). By comparison, many factors that are reliably linked with mental health problems, including family socioeconomic status (Reiss, 2013), family history of depression or anxiety, and exposure to adverse early experiences (Maughan, Collishaw, & Stringaris, 2013), typically account for 5 to 20% of the differences between adolescents' reported mental health symptoms.

In our own research with 10- to 14-year-old adolescents in the United States, neither the amount of time adolescents spent online each day each day, nor the time they spent engaged in a wide range of online activities, including social media use, increased their mental health symptoms (Jensen, George, Russell, & Odgers, 2019). Instead, small associations were found in the opposite direction: Teens who were more frequent texters reported feeling better (less depressed) than their peers who engaged in texting less frequently.

Given these weak and inconsistent correlations, these findings suggest that if adults are concerned about the causes of adolescents' mental health symptoms, then social media use is *not* the logical place to start the conversation. Instead, it is more productive to begin with known and robust risk factors for mental disorders. Interestingly, smartphones and social media are now entering these conversations in a new way—not as a cause or contributor, but as potentially powerful tools for reaching and supporting adolescents who are struggling with mental health issues or who are searching for support.

The second review completed by Orben (2020) reached similar conclusions regarding the small and inconclusive links between adolescents' digital technology use and well-being. This review also highlighted fundamental flaws in the conceptualization, measurement, and study designs aimed at testing for digital technology "effects." To advance the field, a compelling case was made for moving beyond flawed screen time metrics to adopt more nuanced measures of how adolescents' are spending their time online. A case was also made to adopt open science principles, share data and analysis code, and engage in practices that facilitate independent replication of findings.

But wait—even if associations are small, they can still matter!

One criticism of the conclusions above is that even small effects can have clinically or practically meaningful impacts (Funder & Ozer, 2019). Small effects can indeed matter when exposure is widespread (as in the case of social media) and the outcome is severe (as in the case of depression and suicide risk).

One of the best examples of the clinical importance of small effects comes from the early clinical trials testing whether aspirin can prevent heart attacks. Participants were randomly assigned to take aspirin versus sugar pills (placebo). The investigators called off the study when they discovered an effect that was barely measurable because, although the effect was tiny, when scaled to the population, the treatment would save lives and was unethical to withhold.

Unfortunately, the aspirin example does not generalize well to the social media debate. Unlike the random assignment of aspirin versus a placebo pill where an *effect* can be estimated, social media is not randomly assigned. Instead, adolescents are asked to report and remember both their mental health symptoms and their digital technology use (meaning associations may be due to the fact they are recalling both things at the same time, are biased in how they remember them, and/or that they are both driven by other factors). So yes, small effects can be meaningful, but with existing evidence we have no way to separate cause from effect in social media research with adolescents.

This does not mean that we should stop asking how social media and adolescents' mental health may be related. Instead, we need more rigorous and, ideally, experimental studies. A handful of experimental studies have been conducted, but they have primarily included adults, and participants have not been blind to their condition. (Participants typically know that they are being asked to give up social media, and they have also repeatedly heard the message that social media is bad for them.)

For example, one study cited frequently to make the case that social media is harmful for adolescents relied on Danish volunteers (average age, 48 years) assigned to take a break from Facebook. These participants then reported more positive emotions when compared to the control group, who continued to use social media as usual (Tromholt, 2016). Some studies with college student volunteers have demonstrated elevation in mood following randomly assigned social media restrictions (e.g., Hunt, Marx, Lipson & Young, 2018). But again, participants were not blind to the condition, and it is not clear how far these findings generalize beyond these selected samples.

Experimental studies of all types that include adolescents (especially younger ones) are sorely needed.

Is social media harmful for only girls?

Across a number of studies, stronger associations have been found between social media use and depressive symptoms among young girls (Heffer, Good, Daly, MacDonell, & Willoughby, 2019; Kreski et al., under review; Orben, Dienlin, & Przybylski, 2019). For example, a longitudinal study of more than 12,000 adolescents in the U.K. found few consistent linkages between digital technology usage and adolescents' well-being. (Associations were small, varied in direction, and typically not robust to differing analytic approaches.) However, findings were somewhat more consistent among girls versus boys (Orben et al., 2019).

A recent longitudinal study in Canada following more than 600 students in grades 6–8 and 1,100 undergraduate students over two years also found associations among girls only (Heffer et al., 2019). However, the data suggested that depressive symptoms predict social media use, but not the other way around. That is, earlier social media use did not predict later depressive symptoms, but (among females only) earlier depressive symptoms predicted later social media use. This finding was stronger among the younger adolescents versus the older college-age students.

Should we stop talking about the role of social media in adolescents' mental health?

No, because it is possible that social media impacts adolescents' mental health in ways we have not yet been able to capture accurately. High-quality research is needed now more than ever, with rising rates of mental health problems, rapid increases in social media engagement and time spent online, and a global crisis affecting the world's health, societies, and economies. However, while we continue to advance our understanding of how adolescents' digital technology use is connected to their mental health, we also need to invest in research and intervention trials that test whether social media and online tools can be used to support adolescents' mental health needs.

Adolescents are increasingly turning to digital platforms and online supports to learn about mental health issues and to address their own mental health concerns (Pretorius, Chambers, & Coyle, 2019). One exciting, but still underexplored, possibility is that clinicians and other mental health professionals may be able to leverage social media and smartphones as part of the solution to address increasing mental health needs among young people (Haidt & Allen, 2020).

A narrative review of 28 studies of help-seeking behaviors showed that many young people between the ages of 12 to 25 struggling with mental health problems are spending a significant amount of time searching for support online. Moreover, potential benefits of online help-seeking included anonymity and privacy, immediacy, ease of access, inclusivity, the ability to connect with others and share experiences, and a greater sense of control (Pretorius et al., 2019).

Adolescents also report turning to online spaces for support when they are struggling (Kauer, Mangan, & Sanci, 2014) and using social networking sites in the face of setbacks (Toma & Hancock, 2013). A national survey of 1,300 14- to 22-year-olds conducted in 2018 found that 42% had gone online for health information about anxiety, and 30% reported going online for information about depression.

Adolescents reporting moderate to severe symptoms of depression were more likely than their peers with no symptoms to report the use of online health resources, including reading or watching someone else's health story online (75% versus 54%, with no symptoms), going online to search about mental health (90% versus 48%), and connecting to health providers (32% versus 13%) (Rideout & Fox, 2018).

On a positive note, digital tools offer the promise of taking evidence-based interventions to scale, reducing disparities in access to effective treatments and supports, and removing barriers to treatment resources (Lind, Byrne, Wicks, Smidt, & Allen, 2018).

However, a recent review of apps focused on mental health demonstrated that, with some important exceptions (e.g., [Headstream](#), [SMAHRT](#)) the vast majority of evidence-based mental health apps target adults or young children. (For a review, see Ito et al., 2020 and [PsyberGuide](#).) For the most part, adolescents have been left out of this design space. This is a critical omission as they represent a population with high mental health needs, who are already engaging with online tools and spaces to explore and seek help for mental health problems.

Summary

- There is little evidence that the amount of time adolescents spend on social media is reliably linked to serious mental health problems, like depression and anxiety. When associations are present, they are small, mixed in direction, present only for girls, and offer no way to sort out cause from effect.
- In one large and recent longitudinal study, girls struggling with mental health symptoms went on to use social media in different ways, but earlier social media use did not predict new mental health symptoms. No associations were found among boys.
- More research is needed as most studies have relied on simple measures of screen time or social media use and have not captured the diverse ways that adolescents spend their time online or their motivations for doing so, both of which may be linked to mental health.
- Impacts of digital technology are likely to vary widely between adolescents; those who are vulnerable due to existing mental health problems or household circumstances may be both at heightened risk and have the most to gain from positive and equitable access to the online world.
- Adolescents growing up in lower-income households or extreme poverty often have less reliable means of connecting to online educational resources and have riskier patterns of online engagement and interactions on social media (George et al., 2020). Removing barriers to access and reducing risk in online spaces for adolescents in lower-income households and communities should be a design, educational, and health policy priority.
- Adolescent girls, and particularly young adolescents age 10 to 14, are emerging as a potentially vulnerable subgroup, not only to study but also to target with tailored social media intervention strategies.
- There are new opportunities to reach adolescents in online spaces to support mental health; while the number of apps that claim to support mental health and well-being is growing rapidly, few platforms or apps are designed with or for adolescents. As a result, adolescents' interests and needs have not been well represented in this rapidly growing field.
- To date, there has been large mismatch between the high level of fear regarding screen time/social media use and adolescents' mental health: Fears about potential negative impacts of social media are high, but evidence of strong, consistent, or causal connection between the two is lacking.
- More than ever, there is a need to refocus our attention on facts not fears when evaluating the role of social media and digital tools in supporting adolescents' mental health. Other pressing concerns around safety, food insecurity, racist violence, inequality, and lack of opportunity are high, and digital spaces are becoming an even more crucial way for adolescents to connect and support each other.

FROM SCREEN TIME TO SCREEN QUALITY

BEFORE SCHOOLS CLOSED DUE to the coronavirus pandemic, most adolescents in the United States were spending more time on screens than they were spending in traditional classrooms, with, on average, nearly seven and a half hours each day spent on digital entertainment media alone (Rideout & Robb, 2018). Now, as adolescents are left with virtual methods as the primary means of learning and social connection, their screen time is further increasing (Fischer, 2020), with one recent survey finding that more than half of “Gen Z” (16- to 23-year-olds) participants surveyed are consuming more videos and 31% are playing more video games than they were prior to the pandemic (GlobalWebIndex, 2020).

But as screen time increases, the conversation has shifted from how much time adolescents are spending online to how their time online can best be used to connect them to classrooms, friends, and extracurricular interests and activities. The script on screen time is evolving, at least for the time being.

The movement away from the screen time debate is a welcome development for many reasons. Well before schools closed and students were required to be online for virtually all aspects of their education and social lives, screen time had become a flawed concept. A consensus was building that the screen time debate was the wrong conversation for parents, educators, and young people to be having. A number of factors were driving this shift, but three main reasons stand out.

First, as reviewed above, statistical correlations between screen time and adolescents’ well-being have been inconsistent with respect to their direction, small when present, and unable to offer guidance around cause versus effect. (Are adolescents who are feeling more depressed logging on more frequently, or does more time spent online lead to symptoms of depression?) This is not surprising, as counting hours online does not distinguish between very different types of online activities.

Second, screen time reports do not appear to correspond well with objective recordings of time spent online (Ellis, 2019), with new research showing that adolescents’ reports of time online appear to be more strongly linked to well-being than objective recordings of device use (Sewall, Bear, Merranko, & Rosen, 2020). These findings suggest that perceptions of screen time

may be measuring something different than actual time on screens and that how adolescents perceive their time online may be correlated or confounded, but not causally linked, to their mental health.

Finally, disagreements over screen time is a leading cause of conflict in families, while discussions or conflict over what young people are spending their time online doing happen much less frequently (Livingstone, Blum-Ross, Pavlick, & Ólafsson, 2018). Beliefs about screen time also may play a role in increasing family conflict as parents who believe their adolescent is “addicted” to their device are six times more likely than those who don’t think their adolescent is addicted to argue with their adolescent once a day or more (34% vs. 5%) (Robb, 2019). While screen time is not a robust predictor of adolescents’ mental health, family conflict has been shown to increase risk for depression and anxiety among adolescents (Herrenkohl, Kosterman, Hawkins, & Mason, 2009).

Is gaming social? Can gaming be protective for adolescents?

Video games have evolved significantly over time and are now incredibly social, with many children and adolescents playing in teams or with “offline” friends. Most platforms offer the opportunity to connect with peers through audio as they collaborate and work either together or against each other in the games. Even adolescents who were not “gamers,” and parents who previously placed heavy restrictions on time spent on online games, have started to turn to platforms like Minecraft, Fortnite, and Roblox to facilitate online meetups during social distancing.

Since social distancing measures have been put in place, there has been a rapid uptake in online gaming, with online games serving as one of the only places where adolescents can meet up to play and connect. Like social media, video games have also come under fire in the past for leading to mental health problems, namely violence. Following exhaustive reviews, experimental studies, and expert panels (Calvert et al., 2017), the consensus is that there are small associations between violent video game use and offline aggression (Mathur & VanderWeele, 2019), and important concerns regarding adolescents who engage in “excessive” gaming at the expense of other activities.

However, there is a growing body of research documenting benefits, both cognitive and social, associated with other types of multiplayer video games (Steinkuehler, Squire, & Barab, 2012) and with gamified mental health interventions for children and adolescents. (For a review, see Granic, Lobel, & Engels, 2014.)

Increasingly, video games are viewed as offering a platform to meet young people where they already are to deliver social and emotional learning and supports (e.g., [Connected Camps](#)). With the exception of a small minority of children and adolescents who engage in excessive and unhealthy gaming, video games are emerging as a potentially valuable setting for skill development and social interaction.

Video game use is also an area where we see remarkable gender differences: Adolescent girls spend their time on social media and other forms of media, while boys spend more of their time playing video games. Teenage boys age 8 to 18 average one hour and 19 minutes a day playing video games, compared to 14 minutes for teenage girls. Looking at time spent on social media, girls spend an hour and a half compared to boys who spend, on average, 51 minutes per day (Rideout & Robb, 2019).

Summary

- Conflict over screens is likely to be more harmful to adolescents' mental health than screen time itself. This is not to say that screen time should be unlimited or that there are no adverse impacts of spending too much sedentary time online. But how adolescents use screens, versus the time they are spending on them, should be the focus.
- Screen time has increased as the coronavirus pandemic dramatically alters the lives of families and adolescents, making it even more important to focus less on screen time and more on the digital tools and experiences that enable young people to connect, create, and contribute.
- Establishing guardrails and negotiating safe and approved platforms where adolescents are allowed to spend their time will become even more important during and following the COVID-19 crisis. This is often referred to as a family media plan and has the benefit of refocusing conversations among parents and teens from "time allowed" to how parents and adolescents want time to be spent.
- Developing a [family social media plan](#) will be especially important for younger adolescents who may be entering into social media earlier than parents would have been previously comfortable with. In these cases, sharing access to accounts and reviewing online exchanges, app downloads, and online activities will provide a chance to develop safe practices and facilitate conversations about how adolescents and parents want time online to be spent.
- On the positive side, social distancing requirements during the coronavirus pandemic are creating opportunities for many families to spend more time together online. Many parents and caregivers are developing a more informed understanding of where their adolescents spend their time online, and are now better positioned to develop a family media plan.
- Gaming, when done in balance with other activities (especially for boys), may offer a way to connect socially with peers during social distancing and help to maintain a sense of normalcy around both play and peer contact.
- Most adolescents have already developed the online skills required to stay connected with their peers during the coronavirus pandemic. However, many adolescents, especially those who are younger or have not already curated strong social networks, may require support and scaffolding to maintain connections and manage communication with peers during this time.

SUPPORTING ADOLESCENTS IN AN INCREASINGLY DIGITAL AND UNCERTAIN AGE

MANY PRIOR DISCUSSIONS OF technology and adolescence have referred to adolescents as a uniform category, with relatively little attention paid to the differences in usage patterns, parental concerns, and most likely effects across this age period. The result has been conversations that are simplified to asking whether using digital technology or social media is “good” or “bad” for adolescents in general, with little reference to the fact that the risks and opportunities vary dramatically between ages 10 and 24.

The following section identifies risk and opportunities across adolescence, alongside suggestions for caregivers, educators, the tech industry, and teens themselves to support development in an increasingly digital and uncertain age. Where possible, targeted suggestions are made for responding to risks and opportunities across early, middle, and late adolescence.

Early adolescence represents one of the most critical, but overlooked, age periods for developing guidelines around social media use and supporting mental health. It is a time of:

1. First entry into frequent and often solo social media engagement,
2. Entry into puberty and the onset of rapid social and emotional changes, including elevated risk for experiencing mental health symptoms, and
3. Relatively strong parental and caregiver influence in shaping norms, monitoring behaviors, and providing supports that can be protective in the years ahead.

TABLE 1. Key risks and opportunities of social media usage, by age group

	Risks	Opportunities
Age 10 to 14 (early adolescence)	<ul style="list-style-type: none"> • First entry to social media and first onset of mental health symptoms for many • Officially restricted from social media until age 13, so protections not in place for age-appropriate content • COVID-19 crisis: earlier entry to social media than anticipated or desired by families 	<ul style="list-style-type: none"> • A new setting to monitor, identify, and address adolescents’ interests and emotional needs • Sensitive time for social learning and access to an unlimited range of content and supports • More opportunities (on average) for parental engagement, scaffolding, and influence than later in development
Age 15 to 18 (middle adolescence)	See all ages.	<ul style="list-style-type: none"> • Opportunities for peer mentorship and supporting younger peers as they transition online
Age 19 to 24 (late adolescence)	See all ages.	<ul style="list-style-type: none"> • Connection to social networks and supports during critical transitions to work, college, and more independent living conditions
All ages	<ul style="list-style-type: none"> • Violations of privacy and misuse of data • Exposure to hate speech, misinformation, and harassment • Increased risk for adolescents who are sensitive to rejection, social comparison, and offline bullying and victimization • COVID-19 crisis: increased unsupervised time online and exposure to negative content, especially for vulnerable adolescents 	<ul style="list-style-type: none"> • Access to mental health supports and services, minus common barriers • Strengthened communication between caregiver and adolescent, and more opportunities for shared play and experience • Access to supportive online communities for those who do not have strong supports offline, or who may be marginalized or vulnerable • COVID-19 crisis: remain connected to peer networks and educational supports

Officially, adolescents are not allowed on most social media platforms until they are 13 years old (e.g., Facebook, Instagram, SnapChat, TikTok) or in some cases (WhatsApp, TikTok Direct Message) until they are 16. But recent surveys show that many young adolescents have a social media account and use them frequently (George et al., 2020; Rideout & Robb, 2019).

As shown in Figure 3, our own research with a population representative sample of more than 2,100 adolescents age 11 to 14, we find that almost half (49%) of adolescents 11 or younger had a social media account, and by age 14 this increased to 85%. Most young adolescents will be starting to engage with social media for the first time and will require scaffolding from both adults and, ideally, older peers for developing strategies for managing their engagement, addressing negative content and interactions if and when they occur, and keeping their profiles and information safe.

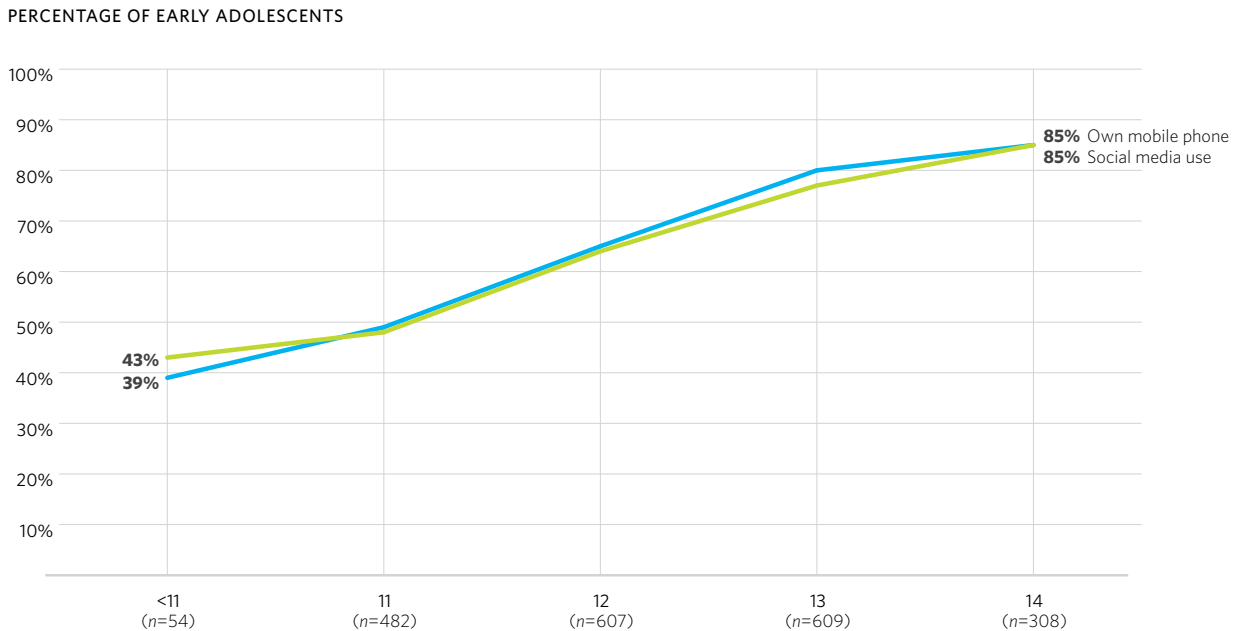
Early adolescence represents an unique opportunity to target emerging mental health problems as early interventions are likely to be most effective in altering long-term trajectories. There is an urgent need to adopt health practices and create digital spaces for young people that support developmental needs and mitigate risks. During the pandemic, innovation is required to compensate for the loss of traditional supports and address added stress and

uncertainty, especially among those most vulnerable or impacted. Fortunately, given what we already know about adolescent development, we are well positioned to minimize risks and support positive development during the coronavirus pandemic and beyond.

Once teens reach middle adolescence (age 15 to 18), they often have years of experience using social media accounts and managing their online friendships and networks. Social connections with peers remain central, but teens describe beginning to curate their social media engagement in ways that “reduce drama,” that is, increase stability in friendship groups, minimize interactions with negative content, and help them focus on the people, interests, and activities that are most important to them (Ito et al., 2020).

By this age, many adolescents will have developed social media engagement strategies and habits that work for them, and are aware of the need to balance offline and online responsibilities and interactions. However, this is also a critical period to prevent gaps from emerging with respect to unequal access and experiences and the effects of time spent online. It is also important to continue to pay attention to the online behaviors and risks among adolescents who are exhibiting signs of mental health problems, harassment, or negative self-appraisal.

FIGURE 3. Early adolescents who owned a mobile phone and used social media, by age



Source: George et al., 2020.

Social media and peer networks change in fundamental ways during late adolescence and as teens make transitions into their next educational, training, work, or life phase. During this time, caregivers and adolescents often use mobile phones and social networking to stay connected while physically separated (e.g., for those who leave home to attend college, go to work, or travel).

One study of first-year college students found that students used digital communication frequently (multiple times per week) to communicate with their parents, and that digital communication with both peers and parents helped students to “bounce back” from an experimental stressor.

One study of first-year college students found that students used digital communication frequently (multiple times per week) to communicate with their parents, and that digital communication with both peers and parents helped students to “bounce back” from an experimental stressor. When these same students were followed on their mobile devices for two weeks, virtual communication with a parent appeared to be protective as it reduced the association between same-day stressors and mental health symptoms (George, 2017). Here, digital communication and parental support appeared to assist with the transition to college, a time and population where mental health problems are prevalent (Auerbach et al., 2018).

Of course, not all students have the benefit of supportive relationships with caregivers and parents during this transition. Thus, it will be important to know whether virtual communication and supports from others can protect against mental health problems during this time.

Older adolescents also hold a significant amount of expertise and advice that could benefit their younger peers. In a recent focus group, Latina college students were asked what advice they would offer to their younger selves, siblings, or cousins about managing social media. Many of the young women described significant changes in the way that they used social media across adolescence, including reducing their engagement in online “drama” and conflicts and the curation of their social media accounts and interactions to remove the “noise and hassles” that their younger selves often contended with.

These discussions highlighted the ways in which adolescents’ use of social media and the development of individualized habits, strategies, and routines evolved over time. These older adolescents also described the process of maintaining tight close connections through finstas (a second, often more private and frequently used Instagram account) or private chat and messaging channels, and engaging and sharing less on the open internet (Ito et al., 2020). Research has also demonstrated the perils and promise of social media for Black youth as repeated online exposure to racialized violence threatens mental health, while, in one recent study, Black girls between the ages of 18 and 24 reported finding ways to reclaim and recreate digital spaces to foster wellness and protect against racialized trauma both offline and online (Chantè Tanksley, 2019).

Targeted recommendations

Parents and caregivers

- **Talk** to adolescents about the places where they feel supported and safe online, and ask what draws them to particular platforms and sites.
- **Ask** young people how the people they follow or interact with online the most make them feel.
- **Identify** when social media or online exchanges are increasing stress or spilling over into offline problems with friends and family or at school.
- **When possible, reserve judgements** about screen time. The current situation will likely lead to more time on screens for adolescents, and science does not support the addiction or harm narrative. Even though many young adolescents report being “addicted to their phones,” very few robust associations are found between screen time and academic performance, mental health, school belonging, or physical health (George et al., 2020).
- **Pay close attention if your adolescent is already struggling offline.** Early adolescence is a time when signs of mental health problems, such as depression and anxiety, first begin to emerge. Offline risks and changes in behaviors often coincide or overlap with online risks. This means that parents and caregivers can often see warning signs of emerging mental health problems and indications that adolescents may be struggling in their online relationships and activities as well.
 - For young teens with social anxiety, there are digital tools that can be used to enhance social skills and develop routines for managing anxiety, but most require scaffolding and support from adults or peers to keep young people engaged.
 - For those who are prone to negative self-evaluation and depressive symptoms, careful reviews of online content and activities will be required, alongside the use of strategies for disrupting negative viewing patterns and building skills for support seeking. With young people’s permission, social media contracts can be set up to allow for varying levels of access and supervision over young teens’ accounts.
- **Be prepared for younger adolescents to enter social media earlier than planned.** In the context of the coronavirus pandemic, parents and caregivers of younger adolescents may be faced with granting access to social media and, ideally, developing a family social media plan, sooner than anticipated. In this case, scaffolding, monitoring, and supporting social media engagement becomes even more important. One critical question to ask is whether your adolescent is already experiencing anxiety or problems in peer relationships. If so, earlier entry into social media will carry added risks and could be delayed unless older supportive peers or caregivers are available and willing to scaffold entry and engagement online.
- **Ask what you are shutting out when you turn off your adolescent’s smartphone.** Access to mobile phones is often treated as a privilege that can be revoked based on both offline and online behavioral violations. If adolescents are in distress or acting out, the immediate response from a parent or caregiver may be to take away their phone. This may be the right decision, but it is also important to consider whether your adolescent is using the device to cope with mental health problems by seeking out information, advice, or support as most adolescents report doing. And if so, find ways those tasks can be facilitated without the device.

Targeted recommendations, *continued*

Schools, counselors, and teachers

- **Increase the availability of and access to digital mental health tools as well as online learning tools for students.** Many offline supports for adolescents' mental health will no longer be available, including face-to-face support from school and peer counselors, coaches, teachers, and psychologists. Although some of these supports and services may transition online, delivery will be uneven and likely inequitable. This will require partnerships and trainings with established digital mental health providers along with investments in technology and technology supports capable of providing equitable, secure, and easily accessible tools service delivery.
- **Create opportunities for adolescents to innovate and support each other.** Adolescents are innovators and have already developed creative ways of checking in with peers and offering online support. Encourage adolescents to reach out to friends or peers who may be struggling through this crisis and build opportunities for them to engage in offering virtual social support. Offering support and helping others not only benefits the recipient, but can provide a sense of purpose and benefit those offering support.
- **Look for signs of mental health risk online.** Online risk is not hidden. Rather, offline risk often signals online risk. One of the most consistent findings is that young people who are struggling in their offline lives (often in ways that are visible to teachers, counselors, and other students) are also struggling and at risk in online spaces. This means that for many young people, we have another way to see when they are struggling and to reach them in times when support is most needed. Digital traces of adolescents' hopes, needs, and pain are frequently left in online spaces for peers, and often adults, to find.
- **Offer virtual tours, introductions, and transition ceremonies.** Many young adolescents will be navigating the transition from elementary to middle school at this time. Under the best conditions, this transition is marked by a dramatic shift in routines, changing peer networks, and new risks and opportunities. Similarly, transitions to high school and college represent major life transitions that will require additional support in the coming months. Schools, parents, and adolescents will need to find new ways to acknowledge and support this transition. This may include virtual tours of new schools and spaces, pairing adolescents with mentors to facilitate the transition, and finding ways for teachers to connect and welcome new students in ways that are equitable and supportive.

Targeted recommendations, *continued*

Tech industry

- **Recognize that it is not realistic or ethically justifiable to assume that platform users are older than 13.** Large technology companies and platform moderators need to take responsibility for ads and content directed at adolescents, and need to require more proof of age than reporting a birth date at a single point. This is especially true now as we are seeing increases in engagement on social media platforms during the pandemic (Jones, 2020). Social media platforms were not designed with adolescents in mind, but more than 50% of adolescents below the legally required age limit report having an account. Technology companies can no longer ignore this reality and the responsibility that comes with having people younger than 13 on their platforms.
- **Acknowledge the large presence of young adolescents on main versus child-friendly sites.** Moving young adolescents off main platforms by creating spaces designed only for adolescents does not go far enough. This is especially true for those on shared devices or those who do not have an adult to set up and monitor their accounts. Most adolescents younger than 13 are on the main versus “child only” platforms (e.g., YouTube versus YouTube Kids). Accountability plans, algorithms, design, engagement techniques, and best practices need to have developmental considerations and science “baked in” from the outset, not only relegated to a specialized team or platform.
- **Block the proliferation of hate speech and misinformation.** This has always been an important charge for the tech industry, but it has become increasingly urgent as violence against communities of color is being exacerbated by activity in online spaces. The proliferation of hate speech and misinformation on social media is, in turn, likely to impact adolescents’ mental health negatively and leave adolescents of color especially vulnerable as they develop their sense of racial/ethnic identity. On social media platforms, this issue needs to be evaluated through a developmental and culturally sensitive lens, not only a First Amendment one.
- **Design with adolescents’ well-being top of mind by developing an incentive structure that harnesses the power of a young and rapidly growing audience to promote positive mental health versus profit only.** It is important to recognize the social aspects of gaming and the role that the gaming industry, influencers, esports developers, and leaders have in supporting mental health and positive social interactions in these spaces. Likewise for young users who may be sensitive to body image displays, it is important to promote body positive influencers and restrict ads and content that encourages unhealthy and disordered eating. More generally, there is a need to moderate content to ensure it is both age appropriate and health promoting, and to do so in ways that are automated (e.g., built into content and security-screening algorithms) and incentivized (e.g., rewarded when age-targeted content is adopted by the appropriate populations) in the platform.
- **Increase accountability in ways that integrate developmental science, and acknowledge the role of digital technology as a public good supporting adolescent development.** The collective responsibility of industry and other stakeholders has been elevated as physical meeting places for adolescents have closed, and the virtual world becomes the new playground or schoolyard.
- **Invest in the digital mental health space.** Attention to this area is sorely needed, and partnerships with large tech companies are likely to increase access to evidence-based tools and therapies developed for and with adolescents. In the context of the coronavirus pandemic, the need for digital mental health supports is expected to increase. Adolescents are cut off from their traditional services and supports, and new stressors are likely to increase demand for interventions and treatments targeting anxiety and depression as the needs of adolescents who may be especially sensitive to disruptions in routine (e.g., those with obsessive-compulsive disorder or autism spectrum disorders). Unfortunately, most digital mental health services have not been designed with young people in mind.
- **Engage adolescents, especially those who are most vulnerable or often excluded, in the design process.** Unfortunately, so much of the uneven delivery of services can be traced to socioeconomic factors, and the need for online supports and equitable access for marginalized or stigmatized adolescents becomes even more crucial when in-person supports have faded. Leaders in the digital mental health space are beginning to fill this need, but in most cases adolescents are left out of these discussions, and resources and development are directed toward tools for adults and young children.

Targeted recommendations, *continued*

Polymakers

- **Invest in longitudinal and experimental research.** Studies should be designed to assist behavioral experts better understand the relationships between digital media use and early and adolescent development in the following research fields:
 - **Cognitive:** Development of children and adolescents, language development, executive functioning, attention, and creative problem-solving
 - **Mental health and emotional:** Relationship skills, empathy, distress tolerance, perception of social cues, bullying, depression, anxiety, addiction, obsessive behavior, and suicidal ideation
- **Close the homework gap for good.** Ensure all adolescents have consistent access to high-quality devices and robust broadband internet so they can successfully engage in distance learning and health care as well as be creative and meaningfully engage with friends and family.
 - Invest in deployment of high-capacity broadband networks to underserved (tribal, urban, and rural) communities.
 - Make a long-term commitment to funding the necessary continuing broadband adoption measures needed for all families to meaningfully connect, including cost support for devices and service subscriptions, support for training, and tech support.
- **Protect adolescents and families from harmful design and strengthen platform accountability.**
 - Ban the use of harmful design techniques on adolescents (“dark patterns” and other design choices that deceptively push adolescents into compulsive usage).
 - Restrict code and design that automatically push harmful or age-inappropriate content to adolescents.
 - Develop strong protections against allowing adolescents to become unwitting marketers for companies’ advertising campaigns.
 - Provide clear guidance from law enforcement (such as the Federal Trade Commission or state attorney general), or clarify the authority necessary to investigate and prosecute platforms that engage in unfair and deceptive practices with respect to features related to user safety. Families and adolescents rely on these assurances from platforms to provide a safe online environment free from harassment and abuse.
- **Recognize that information about mental health is sensitive and requires additional privacy and security safeguards.** This is especially important for apps and services targeted to adolescents, who are at a different developmental stage than children or adults.
 - Apps and services targeted to children and adolescents that collect this type of information should be subject to strict data minimization and data-security requirements.
 - Information about how this information will be used or shared should be provided to adolescents in a manner appropriate to their age and level of understanding.
 - Mental health tools should not be permitted to fall into the “regulatory gap” between our existing laws that govern child and adolescent privacy, educational records, and certain covered health entities.



CONCLUSION

ALREADY 2020 HAS DELIVERED dramatic global challenges that will define this generation. Almost overnight schools, peer networks, workplaces, and communities were pushed online. Children and teenagers have been disconnected and cut off from the physical spaces, face-to-face interactions, and activities that defined their daily lives and supported their emotional, cognitive, and social development. Even before the coronavirus pandemic, digital technology was evolving at an unprecedented speed, and adolescents were early and enthusiastic adopters of digital tools. Mobile phone ownership in the United States is virtually universal by middle adolescence. Worldwide, 1 in 3 internet users is younger than 18. Supporting adolescents during the pandemic will require creating and supporting digital spaces that meet a variety of essential needs for still-developing adolescents.

Young people today have already been growing up in the face of unprecedented technological advancements—the Fourth Industrial Revolution—and are now facing a pandemic that is likely to disrupt economic, social, and educational sectors in ways that will dramatically shape the opportunities available to this generation. Racialized violence and subsequent activism to end systemic racism and violence is leading to demands for immediate policy, societal, criminal justice, and educational reforms, and many adolescents are, or will soon be, engaged in this movement.

Digital media and tech can and should be a social safety net right now. Similar to other social safety nets, it's currently not shared equitably among everyone and that makes some adolescents particularly vulnerable. Online platforms are currently the equivalent of the lunchroom cafeteria or public park, which raises the level of responsibility around what online communities and outlets need to do to serve and protect adolescents. Offline risk has always preceded and often mirrors online risk, and this point is especially salient now. The COVID-19 crisis has shone a bright light on unequal access to reliable digital tools and connections as well as the absence of adults in many cases to curate and support online engagement and learning. Ultimately, these are contributing factors in determining who is at greatest risk of being left behind in the aftermath of the crisis.

Gaps in access to online supports, resources, and opportunities need to change to ensure that adolescents can thrive in an increasingly digital world that is both uncertain and unequal. This will require partnerships between industry leaders, policymakers, educators, parents, and adolescents themselves. The bar has been raised in terms of collective responsibility, not only for ensuring access to educational opportunities, but also for facilitating equitable access to support adolescents' developmental and mental health needs using online tools and spaces.



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