SHARED EXPERIENCES

HOW SOCIAL MEDIA AFFECTS THE WELL-BEING AND EMPOWERMENT OF GIRLS AND YOUNG WOMEN

California Partners PROJECT

UCLA Chicano Studies Research Center

CONTENTS

INTRODUCTION

As a mother of four, including two kids in their tween and teen years, I recognize the prevalence of technology in young people's lives. We have become an increasingly digital world - exacerbated during the COVID-19 pandemic, where our kids' access to devices became necessary for remote learning and social media became their near-constant companion.

But as we study the effects of social media on young people's lives, it is clear we've swung the pendulum too far in

Jennifer Siebel Newsom

terms of their exposure. Quite frankly, as a parent, I am terrified about what our innocent kids are exposed to and the values and fear these experiences instill in the younger generation, whose cognition, emotional regulation, and critical thinking skills are still very much in development.

I see this with my own kids: my daughters are exposed to consistently harmful messages that their value lies solely in their youth, beauty, and sexuality - and my sons are fed disturbing content around violence and toxic masculinity. As I have researched for my films, none of this is new - it's just been made worse by the 24-7 inundation of dangerous and addictive content readily available at their fingertips.
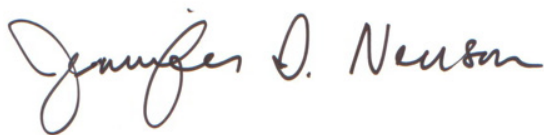
My friend Joe Ehrmann shared in my documentary *The Mask You Live In* that "comparison is the thief of all happiness." Social media was unfortunately constructed with a hierarchy in mind - you are liked or disliked, in or out. As a result, adolescents are constantly comparing themselves to others. What an unfortunate toll this has taken on their mental health.

Excessive social media use further hampers critical aspects of development, such as emotional regulation: this inability has been shown to correlate with higher levels of suicidal ideation and suicide attempts. Just this year, we saw a report from the Centers for Disease Control and Prevention indicating **nearly 30% of U.S. teen girls seriously considered taking their own lives - an increase of 60% from a decade ago.**[1] These are the very real consequences at stake when we discuss the dangers of social media and when adolescents are already in a time of heightened sensitivity and vulnerability.

Of course, social media has positive aspects, such as the notion that community can be cultivated online. But we also must emphasize fostering genuine, in-person relationships and community away from devices.

So it's up to us - as the adults, caregivers, policymakers, and tech industry employees - to hold tech titans accountable, take responsibility for what our youth are exposed to, listen deeply to their experiences, enlist serious guardrails to protect their physical and mental well-being, and ensure all children get the best start in life: one that preserves their innocence and their physical and mental health. In essence, we need tech to be a force for good.

In partnership,

Jennifer Siebel Newsom
First Partner of California and Co-Founder of the California Partners Project

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[1] Centers for Disease Control and Prevention. (2023). Youth Risk Behavior Survey: Data Summary and Trends Report. U.S. Department of Health and Human Services.

PERSPECTIVE

California is home to organizations and institutions that develop innovative technologies and advance creative approaches to youth leadership development. We appreciate the opportunity to work with the California Partners Project in an applied research capacity. Our report, *Shared Experiences*, synthesizes the evidence base for action on youth's well-being and tracks the risks and rewards of their digital activities, with a particular focus on girls and young women.

The participation of girls and young women in digital technologies helps diversify representation in social media and generates unprecedented opportunities for youth activism and empowerment. With proper controls that create a safe place for users, social media platforms can build community, spread educational information, and amplify the talents and voices of girls and young women. By encouraging diverse content creators, social media platforms can contribute to more inclusive discourses.

As our society recovers from the COVID-19 pandemic, growing economic inequality and deadly climate change have exacerbated a mental health crisis among our young people. Their use of social media has skyrocketed in recent years, and profitable social media companies are falling short in prioritizing the

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mental health and well-being of minors. The California-based young women whose experiences are emphasized in our report call on stakeholders to find ways to ensure that all girls and young women in tech are safe and supported.

We hope for greater corporate responsibility. More must be done to mitigate the harm young users, especially girls and young women, often experience on social media platforms. Social media companies can be part of the solution by implementing policies and practices aligned with the needs of racially diverse young users. Further controls must be implemented to prevent excessive use, hurtful context, predatory behavior, and the spread of disinformation.

Tech-savvy girls and young women yearn for greater access to digital technology and instruction that will enhance their talents. Social media companies can help by investing their profits in initiatives designed to advance the tech skills and creativity of girls and young women, especially those from Black, Latina, and Indigenous backgrounds who have been largely excluded from opportunities to excel in STEM fields. California's private and public sectors can partner to develop and fund infrastructure that will support this next generation of tech leaders. Through their vision, talents, and values, these girls and young women have the potential to heighten the positive elements of social media while diminishing its harmful impacts.

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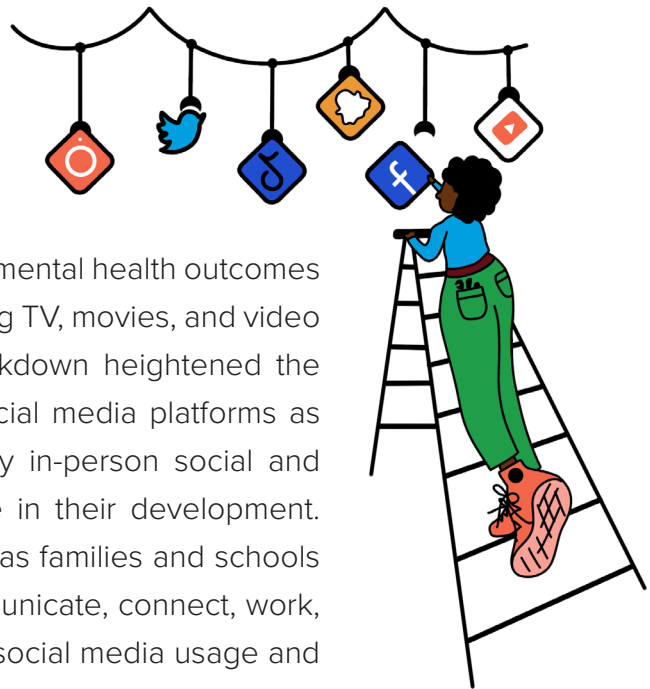
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SETTING THE STAGE

Social media plays a vital role in the lives of many young people, influencing how they connect to their peers and the broader society. This report focuses primarily on social media because it is more strongly associated with negative mental health outcomes than other forms of screen time, including TV, movies, and video games.[1] The 2020-2021 pandemic lockdown heightened the centrality of, and engagement with, social media platforms as young people missed out on everyday in-person social and academic interactions at a critical time in their development. Emerging digital technologies boomed as families and schools depended on online platforms to communicate, connect, work, and learn. Quickly evolving patterns of social media usage and design, along with the content young people are exposed to, pose challenges to researchers as they seek to understand the variety of ways these digital platforms shape young people's transition to adulthood.[2] One thing, however, is clear; adolescents' relationship to social media and its subsequent impact on their lives is complicated and varies across sex/gender, race/ethnicity, and other aspects of identity.[3,4,5,6]

One thing, however, is clear; adolescents' relationship to social media and its subsequent impact on their lives is complicated and varies across sex/gender, race/ethnicity, and other aspects of identity.

This report briefly summarizes a selection of studies and research examining social media's positive and negative impact on adolescent development and well-being, focusing on girls and young women. The social media platforms popular among teens during writing include, but are not limited to, Instagram, TikTok, Snapchat, Twitter, Facebook, and YouTube. This review considers the variation in function and design among platforms with similar features. Adolescent girls tend to spend more time on social media than boys

and engage in online behaviors associated with poorer psychological well-being.[7] Recent research suggests that teenage girls spend over two hours daily on popular platforms and have mixed opinions about how they impact their mental health.[8] Girls and young women, in particular, use social media in various ways and for different purposes: to foster meaningful connections, seek information and education, and find joy in self-expression. Platforms allow girls from racially and ethnically diverse backgrounds to showcase their experiences and viewpoints. At the same time, social media can contribute to poor mental health through excessive use, unrealistic body standards and social comparison, cyberbullying, the spread of disinformation, and a lack of privacy.

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We Hear You (WHY) Youth Campaign

To complement the research and ground our review, we also consider the specific reflections of young women who participated in the California Partners Project and Youth Leadership Institute's 2021-2022 We Hear You (WHY) Campaign. The project aimed to understand the experiences of young women on social media, provide guidance on how to design and regulate technology to meet their needs, and hold those in power (at technology companies and in government) accountable for supporting their mental

health. The six youth ambassadors were racially diverse, female-identifying or non-binary individuals across California. Their youth programs nominated them based on demonstrated leadership within their communities.

Ranging in age from 13 to 20 years, these youth ambassadors met regularly over Zoom to discuss the role of social media in their lives. With guidance from adult staff facilitators and program leaders, the ambassadors worked together to design and lead small focus groups with 23 adolescent girls from California. Focus group questions addressed the implications of social media for

Focus group questions addressed the implications of social media for mental health, relationships, agency, and voice.

mental health, relationships, agency, and voice. We coded de-identified focus group transcripts and extrapolated salient themes from the discussions. The ambassadors then drew on their focus group findings and internal meetings to develop a declaration articulating their vision, values, and demands regarding digital technology.

The following summary highlights themes from both research and the youth-led focus group discussions and reflections. We also offer some recommendations to support the safe and healthy use of social media.

THE PROMISE OF SOCIAL MEDIA

Social media has become an integral part of youth culture, and many young people find comfort and connection through social platforms. Apps and websites can facilitate the development of close bonds with peers in their adolescent communities and beyond. When asked how social media helps build positive relationships, one focus group participant said, "Sometimes we just give each other advice, or we just talk, and it's honestly very nice and very positive. I've realized that I've created closer bonds with these people than the people that I actually know in person." These connections are important during adolescence when young people develop their identity and find their place in the world through networks outside of their immediate family.[9] Girls of color who use social media can form digital kinship structures and employ a social agency that can be challenging to cultivate and sustain in the real world.[10,11] These online spaces can give youth a sense of control over their lives that they may not feel in their everyday school and home environments.

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Social media has made the world smaller, serving as a medium for maintaining relationships with long-distance friends and family. "I have family who live all over the world, and it's really nice to be able to maintain these long-

distance familial relationships," reflected one youth. Overall, the social connections that young people develop and sustain online can enhance their well-being. Joining or establishing a community (or multiple communities) that entertains, brings joy, and provides a sense of belonging can be invaluable to developing a positive sense of self.[12]

For teens who believe social media to be a positive force in their lives, accessing information and engaging in learning is a significant reason.[13] Young people can find resources and access opportunities through social media networks.[14,15] Teens looking for internships, advice, and tips can search for specific content that meets their needs. As one focus group participant noted, "There are a lot of accounts that teach you how to reflect and heal past trauma or how to confront certain situations. And I think that's really helpful." Platforms also offer access to general education and identity-specific information invaluable for LGBTQ+ youth and other vulnerable groups.[16,17] Vast

social media networks that transcend state and national boundaries can help youth learn about gender identity and sexual orientation and connect with gender-affirming care. For female teens, many state public schools do not teach all of the sexual health topics recommended by the CDC (Centers for Disease Control and Prevention), making easy access to resources and learning even more crucial.[18] For
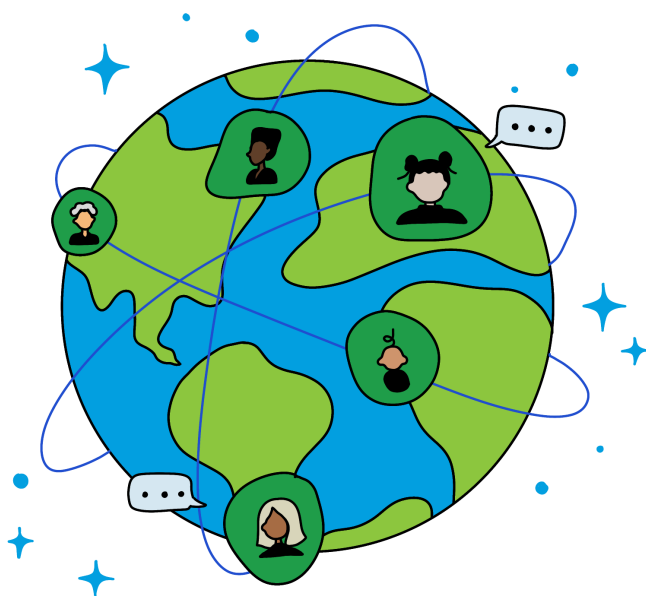
others, social media offers introductions to life experiences different than their own. "I find a lot of happiness in seeing people travel because I like to believe that one day, I will travel there, but for right now, I like seeing it on my phone," voiced one participant. Without global platforms, exposure to diverse cultures and different ways of being from around the world would not be possible for many without the financial means to travel, especially low-income youth.

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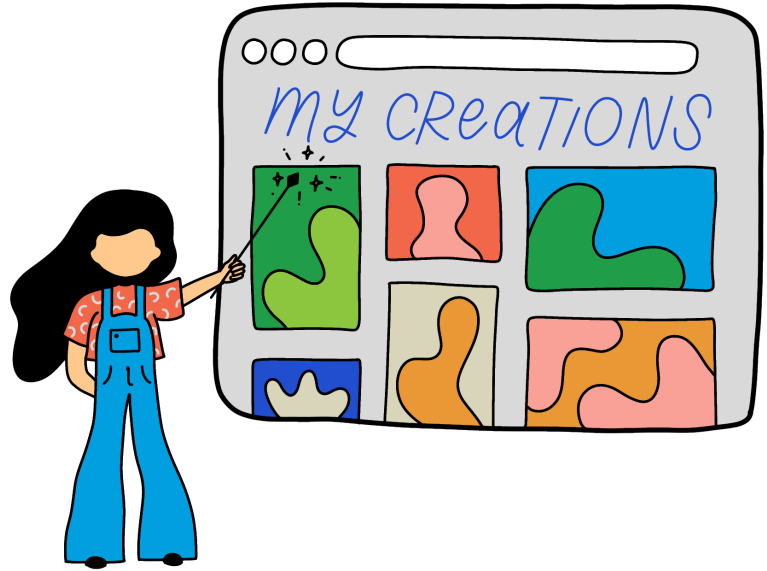
Adolescence is a critical time for identity construction. Social media allows youth to experiment with different identities, learn to present themselves to others, and receive affirmation and validation. Many adolescent girls of color find content on social media that affirms their racial identity.[19] Additionally, young people find safety in self-expression, including artistic and political expression.[20,21,22,23,24,25] "I post a lot of my creative artwork on social media. I like to make different things; whether it's furniture or skateboards or just painting and artwork, I will post that on social media," communicated one youth. Seven out of ten teens say that social media gives them a space to showcase their creative side, sharing aspects of their lives through photos, videos, musical performances, writing, and other artistic talents.[26] They may also voice their opinions, educate their peers about social issues, and mobilize them to support a cause. One study found that Latinx grassroots youth organizing groups use social media to prepare to

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engage in civic action through nonpartisan peer-to-peer voter education.[27] Platforms also support the distribution of social campaigns for diverse youth voices. One focus group participant stated, "As far as activism, I really do try to do a lot of work advocating for Black women and young Black girls. I'm part of a couple of campaigns, and I'll post those on social media to get the word out there to have people support." Using social media, young people can develop a public presence and point of view and broadly shape public narratives about themselves, their communities, and society.

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THE PITFALLS OF SOCIAL MEDIA

Social media platforms hold promise as a facilitator of connections and safe spaces for many young people. Still, research demonstrates they can present challenges linked to adverse mental health outcomes.[28,29] Overconsumption of social media, judgment from peers, bullying, dissemination of negative and false content, and a lack of agency are some risks young people take when using social media. In December 2021, U.S. Surgeon General Vivek Murthy issued a rare public advisory declaring youth mental health as a top national priority and listed social media as a contributing factor to the growing crisis.[30] In January 2023, the nation's top doctor stated that he believes 13 is too young for children to be on social media platforms as kids are still determining who they are.[31] Adolescents' brains are still developing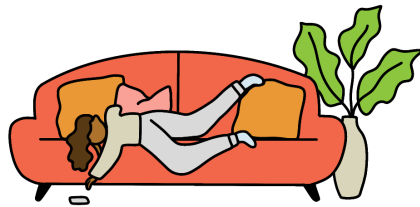 during identity construction, and teens tend to live in the moment. Developmental research has shown that the brain's executive functions, which are responsible for planning, anticipating future consequences, controlling impulses, and comparing risk and reward, are fully developed around age twenty-five.[32] Current generations of youth, often called "digital natives," have never known a world without sophisticated social networks. These technologies have become an integral part of their lives, and teens use them for everything from staying connected with friends and family to learning new things and finding jobs. Given that young people tend to be particularly reliant on social media, its ubiquitous influence cannot be disentangled from daily life.[33]

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3 IN 5

GIRLS FELT PERSISTENTLY SAD & HOPELESS IN 2021

CENTERS FOR DISEASE CONTROL AND PREVENTION

Data from the Youth Risk Behavior Survey, developed by the CDC's Division of Adolescent and School Health and part of the most extensive public health monitoring system in the United States, found that three in five girls felt persistently sad and hopeless in 2021, double that of boys and up nearly 60% from 2011.[34] This unprecedented rise in adolescent mood disorders and related behaviors corresponds with rapid growth and change in the social media landscape since 2012.[35] Studies generally show a correlation between increased time spent on social media and decreased mental health and well-being, especially for girls and young women.[36,37,38] "They [social media platforms] are good at what they do. They're good at catching my attention, so it can be super distracting not being able to tell how long I've been scrolling because I wouldn't even know," voiced one female teen. When social media usage becomes excessive, it can hamper other aspects of development, such as emotion regulation and social interaction, when adolescents are already within a window of heightened sensitivity.[39,40,41,42]

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"I look at their following and think, 'Oh, wow, they have a lot of people following them,' and I feel bad about myself because I don't have that many people."

Additional time spent on social media may lead to negative health outcomes because the visual nature of many platforms has led to a rise in social comparison – young people comparing themselves to peers or popular online personalities and influencers.[43,44] Adolescents constantly seeking validation through social media are more likely to feel inadequate when they compare themselves to others.[45] For many girls, these comparisons lead to a negative body image or low self-esteem when their posts don't yield the social rewards they had hoped for.[46,47] One focus group participant reflected on their followers, "I look at their following and think, 'Oh, wow, they have a lot of people following them,' and I feel bad about myself because I don't have that many people." Social media use can expose adolescent girls to hundreds or thousands of images and photos daily. In a preliminary study conducted by the American Psychological Association, researchers found that reducing social media use by 50% for a short period significantly improved body image in teens and young adults.[48] One focus group teen asserted, "To maintain some of my mental health, I have to take breaks from social media for a good three to six months sometimes."
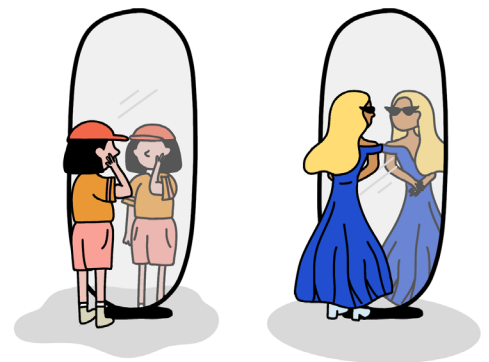
The public arena of social media and the popularity among teens of self-presentation online brings significant concerns about cyberbullying and the repeated sharing of unkind, intimidating, and threatening messages. The extant research suggests that cyberbullying may be more common among girls than boys as both victim and offender.[49,50] In 2021, 20% of females reported being electronically bullied compared

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to 11% of males.[51] Teen girls are also more likely than boys to say that false rumors have been spread about them online.[52] One focus group teen reflected, "On social, it's much easier to spread negativity and put negative comments because no one knows who you are." Research has shown that girls who experience cyberbullying may also be more likely than boys to display internalized symptoms such as anxiety, depression, and suicidal ideation.[53] While boys tend to form friendships based on shared interests and companionship, girls tend to value intimacy and support and often seek these friendship values through community and online connection.[54] Social media can amplify confusing interpersonal dynamics and social insecurities, leading people to internalize negative feelings (such as rumination) or externalize difficult feelings (such as cyberbullying). Moreover, girls of color contend with harassment that is both sexist and racist, compounding the negative impact.[55]

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The internet has made it possible to access news from anywhere in the world, leading to more people relying on online media as a primary news source. Historically, stories about crime, tragedy, and violence have driven news consumption, and over time, news headlines have become increasingly negative.[56,57] The tendency to pay more attention to negative rather than positive information, a human phenomenon known as negativity bias, may primarily fuel this shift.[58] Social media algorithms that flood feeds with bad news can make it difficult for adolescents to escape this negativity. As a focus group teen echoed, "There are at least ten different negative news stories every day. It's really overwhelming when you start seeing all that. With social media, you just have
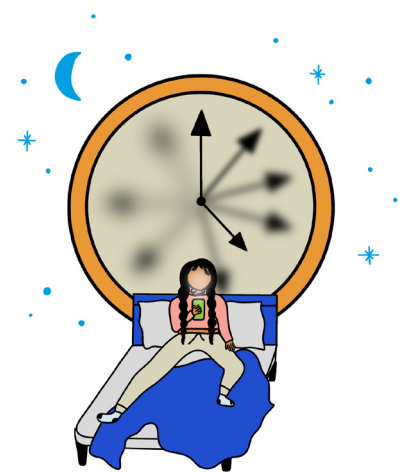
"There are at least ten different negative news stories every day. It's really overwhelming when you start seeing all that. With social media, you just have more awareness of what's happening."

more awareness of what's happening." The constant bombardment of bad news and images can take a toll on young people's mental health. Exposure to disturbing and stressful news headlines without the necessary cognitive and emotional skills to process them is associated with increased fear and anxiety.[59]

The spread of inaccurate, false, and detrimental content creates additional challenges. Social media is a powerful vehicle for the efficient and widespread dissemination of content, yet limited user controls and governmental regulation expose adolescents to content counterproductive to healthy development. As the world becomes more polarized, social media has become a breeding ground for disinformation — misleading, fabricated, or manipulated content — making it difficult for people to discern fact from fiction.[60,61] Focus group discussions reflected this dilemma as teens questioned, "How do you even know if someone is telling the truth?" Unwittingly or otherwise, young people tend to disseminate and amplify disinformation, most often among their peers.[62] The spread of false information can

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erode trust in civic institutions and contribute to violence and hate.[63] Even when content is truthful, negative emotions are still elicited, including posts that aim to raise awareness about social issues.[64] For example, repetitively viewing videos and other content that exhibit police violence can negatively affect young people's well-being, reinforcing feelings of stress and anxiety.[65,66] The pervasiveness of inaccurate content on social media makes it difficult for young people to differentiate truth from falsehood during a pivotal and formative time for reasoning skills.

Lastly, social media companies often require users to forfeit privacy to engage on their platforms. Most teens believe they have little to no control over the data that social media companies collect about them.[67] "It's also very scary how any sort of information can get sold without your permission, without you knowing," one focus group teen observed. Social media companies make a significant portion of revenue by selling the data they collect about their users to data collection companies. These data collection companies then sell the data to other third parties, who use it to target users with advertising.[68]

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Analytics that track every click and engagement by a user can create an environment ripe for exploitation. Dark patterns — design elements that lead users to make unwilling and potentially damaging choices — invite children to share personal information, allowing data about their behaviors and preferences to be collected and used in platform algorithms.[69,70] Research by the corporate accountability group, Ekō, found that even low-level engagement with problematic posts triggered TikTok's algorithm and inundated 13-year-old users' accounts with harmful content promoting suicide and violence despite the content violating the platform's terms of service and community guidelines.[71] Furthermore, in 2021, one in two (50%) girls reported experiencing a potentially harmful experience online, and one in three (35%) girls shared they experienced an online sexual interaction.[72] One female teen shared, "I've seen sexualization of minors which is definitely not okay... It's not good to expose yourself to that, especially for younger people who don't understand the impact of what they're seeing." The manipulative design of social media and the public nature of many platforms lends itself to predatory behavior, compromising young people's safety and well-being.[73,74,75]

"I've seen sexualization of minors which is definitely not okay... It's not good to expose yourself to that, especially for younger people who don't understand the impact of what they're seeing."

WE HEAR YOU (WHY) YOUTH DECLARATION

We Hear You

The We Hear You (WHY) Youth Ambassador program was part of a California Partners Project (CPP) campaign to elevate youth leaders to co-create and promote healthier technology use, design, and regulations.

In partnership with CPP, California statewide youth-based organizations nominated the WHY Youth Ambassadors. Organizations included Alliance For Girls, Youth Leadership Institute, Youth Radio (YR Media), The Representation Project, Shelectricity, and Music Changing Lives, programs all known for uplifting the voices of young people and empowering them to be agents of change.

The WHY Youth Ambassadors used their skills as leaders in their communities to spearhead dialogue and transform tech by exploring improvements to platform design and regulation that better serve the needs of adolescents. The following statement was envisioned and authored by the Youth Ambassadors:

Our Vision

We envision a safe, healthier version of tech that allows us to express ourselves freely and connect with our communities in a way that supports our mental health. In this vision, the voices and opinions of youth are welcomed and considered.

Our Values

1. **SAFETY** All youth feel safe and are protected from harm when engaging online
2. **COMMUNITY** Youth are free to foster healthy connections when engaging online

3. *EXPRESSION* Youth-generated content is valued and credited equitably

4. *INCLUSION* We welcome, celebrate, and respect all identities in online spaces

Our Asks

We ask policymakers and tech leaders to protect the interests of youth on the internet and across all platforms by proactively tackling toxic social issues that arise and harm youth. We ask that online platforms improve their systems to protect youth and folks of color from targeted content, harm, and unfair restrictions. We can realize these requests through the following:

1. Enhanced User Control and Safety

- ✳ Give users and creators more control of feature settings and what content is visible at any given time
- ✳ Address and reduce cyberbullying while not blocking users without their knowledge and provide tools to support kids who are being bullied
- ✳ Restrict the collection and use of minors' personal information for commercial purposes
- ✳ Provide accessible privacy agreements and create intuitive safety features
- ✳ Permanently delete flagged comments that violate community engagement agreements
- ✳ Label images that are altered and enhanced with platform tools
- ✳ Improve systems for reporting harmful and inappropriate content

2. Youth Engagement

- ✳ Invite feedback and trust youth voices and opinions when they share their experiences
- ✳ Form a statewide youth advisory group focused on healthy social media use and partner with the advisory group to design and develop tech with youth in mind

This declaration was written and endorsed by the CPP WHY Youth Ambassadors:
Nancy Aguilar-Aquino, Shawn Isabella Jones, Karina Lipe, Malinalli Perez, Nina Roehl, Sasha Mylan Williams

RECOMMENDATIONS

Based on this research review and the reflections from the WHY Youth Ambassador focus groups with teens and young women, we offer four general recommendations to enhance social media's benefits and reduce negative impacts. As digital natives become a growing share of the adult population, industry regulation, improved media literacy, gender parity in tech, and more nuanced research can have widespread positive effects on civil society, public health, and the economy.

RECOMMENDATIONS
TO ENHANCE SOCIAL MEDIA'S BENEFITS & REDUCE NEGATIVE IMPACTS

1 IMPROVE ONLINE SAFEGUARDS AND CONTROLS

2 DISSEMINATE BEST PRACTICES & EXPAND MEDIA LITERACY PROGRAMMING

3 INVEST IN DIVERSE YOUNG WOMEN & GIRLS TO BECOME TECH LEADERS & CREATORS

4 CONDUCT NUANCED RESEARCH TO GAIN MORE INSIGHT INTO SOCIAL MEDIA'S IMPACT ON YOUNG PEOPLE

IMPROVE ONLINE SAFEGUARDS AND CONTROLS

Government must regulate the tech industry to protect children's well-being by overseeing and holding platforms accountable for their actions. Policies that ensure the transparency of product impact research and encourage innovation and safety by design are essential to support young people in a rapidly evolving digital age. New state laws like AB 2273, the California Age-Appropriate Design Code Act (AADC) signed by Governor Newsom in September 2022, represent a step in the right direction. This legislation, set to take effect in July 2024, will require businesses to take additional steps to protect the privacy and safety of children under 18 who use their online products or services. For instance, the new law requires businesses that meet specific criteria to set default privacy settings for underage users to the most private option. It also prohibits them from collecting, selling, sharing, or keeping a child's personal information unless they prove that doing so is in the child's best interests.[76] Companies can create innovative products with built-in safeguards by designing them with the well-being of youth at the core. As a result, users can experience greater control, increased privacy, and overall healthier engagement with content.

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As more and more youth and families demand change, many other states have created their own versions of the AADC. Maryland, Minnesota, Nevada, and New Mexico lawmakers introduced bills modeled after California's AADC. Additional states – Arkansas, Oregon, Kansas, Connecticut, New Jersey, Florida, Illinois, South Carolina, New York, Massachusetts, Louisiana, West Virginia, Virginia, Texas, Iowa, and Utah – have followed California's lead in drafting children's data privacy legislation independently, with many bills focused on social media specifically. Opponents of the California Age-Appropriate Design Code Act challenged the law in federal court.[77] With users in mind, the AADC can revolutionize technology design, but its long-

term impact remains uncertain. As states take action to regulate online safety, pressure is mounting on the federal government. Momentum is building to update the Children and Teens' Online Privacy Protection Act (COPPA) and pass a comprehensive national law that sets a minimum standard to address the processing of children's data and the design of age-appropriate features. One approach is the Kids Online Safety Act (KOSA), a bipartisan bill that would create a national standard for online safety.[78]

DISSEMINATE BEST PRACTICES AND EXPAND MEDIA LITERACY PROGRAMMING

The majority of parents today believe that parenting is more difficult now than it was two decades ago, with many citing technology as the main reason.[79] Additionally, seven out of ten parents believe that the potential harm of smartphone use outweighs the potential benefits.[80] Caregivers recognize that they have a pivotal role in supporting their children's healthy use of technology but often need more

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knowledge and resources. Parents look to other parents, family doctors, and schools for advice and information about technology use.[81] Several advocacy groups and organizations have already developed best practices for children's engagement with social media. Increasing the visibility of these existing tools by sharing them with parent groups, pediatricians, libraries, and educators can equip caregivers with valuable information to support their children.

Technology companies also have a role to play in helping consumers use their platforms in a way that benefits their well-being.

Technology companies also have a role to play in helping consumers use their platforms in a way that benefits their well-being. Many companies have safety and privacy teams who work with online safety experts to create resources

for caregivers and families, yet they are not widely distributed or advertised. Platforms can publicize these safety features using campaigns that center youth engaging with their products in ways that maximize creativity and well-being. Tech companies can also form partnerships with school districts and organizations to support media literacy and digital citizenship programs, particularly in schools serving low-income communities. Creating public youth advisory councils to hear directly from adolescents could help companies design products that keep children safe, protect their privacy, and encourage social media use that fosters critical thinking and developmental growth.

INVEST IN RACIALLY AND ETHNICALLY DIVERSE YOUNG WOMEN AND GIRLS TO BECOME TECH AND MEDIA COMPANY LEADERS, PROGRAMMERS AND CONTENT CREATORS

Despite girls and women being reliable and consistent social media users, they remain underrepresented in the creation, development, and regulation of technology. Girls are more vulnerable to the adverse effects of social media. We must close the digital divide and provide training, mentoring, and support for young women, especially women of color, to become programmers and creators of content that benefits them and their communities.[82,83] It is important to recognize that Black, Latina, and Indigenous girls tend to be excluded from opportunities that prepare them to excel in STEM fields.[84] As a result, their exposure to basic coding knowledge is relatively limited compared to other youth learning to program. Insufficient exposure inhibits their understanding of how social media technology is programmed and used, thereby hampering their ability to create digital products for social impact.[85]

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There is no question that tech culture continues to be dominated by white men.[86] Gender attitudes undermine girls' interest in STEM, making young women more likely to avoid taking math and science courses.[87,88] This is especially true for girls from marginalized backgrounds who experience exclusion based on their gender, race, and class backgrounds.[89,90] The fear of being seen as confirming negative stereotypes, hostile learning environments, a lack of mentors, and the absence of opportunities prevent many young women from pursuing career paths focused on math and science, content areas required for programming. Women represent only 28% of engineering graduates globally and 11% of practicing engineers.[91,92] At the executive level, women hold only 5% of leadership positions in the tech industry.[93] Without collective encouragement in these fields and incentive structures to close the gap, equal representation is a barrier to harnessing the full potential of technology like social media. Girls and women make up nearly 50% of the global population.[94] If more young women have the skills to create high-quality, educational, and creative digital media content and there are more women in tech leadership, it could lead to changes in the design of products that better serve diverse audiences.[95,96]

ENCOURAGE AND COMMISSION RIGOROUS, NOVEL RESEARCH TO DEVELOP A MORE COMPREHENSIVE UNDERSTANDING OF HOW YOUNG PEOPLE USE DIGITAL MEDIA AND ITS IMPACT ON WELL-BEING

Social media and its role in the lives of young people will continue to evolve as emerging technologies appear. Therefore, researchers, technology developers, and children's advocates must continue tracking how social media helps and hinders healthy adolescent development. To fully understand the effects of social media on younger generations, it is important to use an intersectional lens to assess the different ways social media impacts adolescents of heterogeneous backgrounds. More research is needed to examine social media use by young people from low socioeconomic

backgrounds, gender expansive/gender non-conforming youth, differently abled youth, and BIPOC youth. Applying a racial and class analysis of tech and social media's varying roles in youth well-being is crucial to identifying and implementing solutions at structural and cultural levels.

Over 90% of the existing research focuses on time spent on a platform without addressing important nuances in how youth spend that time.[97] In addition to research that looks at overall social media consumption across demographics, future research should include more sophisticated measures of social media use. Recent research has hypothesized that active versus passive use of social media has disparate impacts on well-being.[98,99] Active digital media use involves creating, sharing, and engaging with others, while passive use refers to consuming content without interacting with anyone.

Over 90% of the existing research focuses on time spent on a platform without addressing important nuances in how youth spend that time.

Long-term and experimental studies are needed to see more clearly how different types of engagement and activities affect young people's health. Other areas that have gone unexamined in the field are the roles of pre-existing mental health conditions and environmental factors on social media interactions. By identifying risk factors associated with problematic social media use, tech companies can proactively design products that mitigate potential problems. Caregivers and families also need research to help determine the appropriate age for young people to start using social media and the limits that should be in place, given the malleable nature

Technology is a permanent fixture in our lives, and finding ways to use it as a tool for good supports young people's long-term health and wellness.

of the brain during adolescence. Finally, few studies explore the impact of different apps and platforms promoting mental well-being and mental health literacy. Technology is a permanent fixture in our lives, and finding ways to use it as a tool for good supports young people's long-term health and wellness.

Designing research that effectively studies children's tech use can be challenging. Research costs, special requirements, and the interplay of digital media and social systems can make it hard for technology companies to justify investing in quality impact research.[100] Regulatory sandboxes – 'safe spaces' that allow businesses to test innovative products without being subject to regulations – have been used in certain industries to test new technologies in a controlled environment before launching them widely.[101] This approach could create a safe and contained space for governments, the private sector, and other stakeholders to develop products and shape innovation-friendly regulations that put the interests of young people first.[102]

ACKNOWLEDGMENTS

REFERENCES

1 Haidt, J., & Twenge, J. (ongoing). Social media and mental health: A collaborative review. Unpublished manuscript, New York University. Accessed at tinyurl.com/SocialMediaMentalHealthReview

2 Davis, Katie, Linda Charmaraman, and Emily Weinstein. (2020). "Introduction to Special Issue: Adolescent and Emerging Adult Development in an Age of Social Media." Journal of Adolescent Research 35, no. 1: 3–15.

3 Ceglarek, Peter J. D., and L. Monique Ward. (2016). "A Tool for Help or Harm? How Associations between Social Networking Use, Social Support, and Mental Health Differ for Sexual Minority and Heterosexual Youth." Computers in Human Behavior 65: 201–9.

4 Garcia, Patricia , Cecilia Fernández, Holly Okonkwo. (2020). "Leveraging technology: how Black girls enact critical digital literacies for social change." Learning Media and Technology 45(4):345-362

5 Metcalfe, Sarah Nicola, and Anna Llewellyn. (2020). "'It's Just the Thing You Do': Physical and Digital Fields, and the Flow of Capital for Young People's Gendered Identity Negotiation." Journal of Adolescent Research 35, no. 1: 84–110.

6 Opara, Ijeoma and Noemy Santos. (2019). "A Conceptual Framework Exploring Social Media, Eating Disorders, and Body Dissatisfaction Among Latina Adolescents." Hispanic Journal of Behavioral Sciences 41(3): 363-377.

7 Twenge, Jean M., and Gabrielle N. Martin. (2020). "Gender Differences in Associations between Digital Media Use and Psychological Well-Being: Evidence from Three Large Datasets." Journal of Adolescence 79: 91–102.

8 Nesi, J., Mann, S. and Robb, M. B. (2023). Teens and mental health: How girls really feel about social media. San Francisco, CA: Common Sense.

9 National Academies of Sciences, Engineering, and Medicine. (2019). The Promise of Adolescence: Realizing Opportunity for All Youth. Washington, DC: National Academies Press.

10 boyd, danah. (2014). It's Complicated: The Social Lives of Networked Teens. New Haven, CT: Yale University Press.

11 Wade, Ashleigh. (2019). "When Social Media Yields More Than 'Likes': Black Girls' Digital Kinship Formations." Women, Gender, and Families of Color 7, no. 1: 80–97.

12 Yang, Chia-Chen, Sean M. Holden and Jati Ariati. (2021). "Social Media and Psychological Well-Being among Youth: The Multidimensional Model of Social Media Use." Clinical Child and Family Psychology Review 24, no. 3: 631–50.

13 Pew Research Center. (2022). "Connection, Creativity and Drama: Teen Life on Social Media in 2022."

14 Katz, Roberta, Sarah Ogilvie, Jane Shaw, and Linda Woodhead. (2022). Gen Z Explained: The Art of Living in a Digital Age. Chicago: University of Chicago Press.

15 Khan, M. Laeeq, Donghee Yvette Wohn, and Nicole B. Ellison. (2014). "Actual Friends Matter: An Internet Skills Perspective on Teens' Informal Academic Collaboration on Facebook." Computers and Education 79: 138–47.

16 Berger, M. N., Taba, M., Marino, J. L., Lim, M. S. C., & Skinner, S. R. (2022). Social Media Use and Health and Well-being of Lesbian, Gay, Bisexual, Transgender, and Queer Youth: Systematic Review. Journal of medical Internet research, 24(9), e38449. https://doi.org/10.2196/38449

17 Craig, S. L., Eaton, A. D., McInroy, L. B., Leung, V. W. Y., & Krishnan, S. (2021). "Can Social Media Participation Enhance LGBTQ+ Youth Well-Being? Development of the Social Media Benefits Scale." Social Media + Society, 7(1). https://doi.org/10.1177/2056305121988931

18 Summary state policies on sex education in Schools. (2020). National Conference of State Legislatures. Retrieved from https://www.ncsl.org/health/state-policies-on-sex-education-in-schools

19 Nesi, J., Mann, S. and Robb, M. B. (2023). Teens and mental health: How girls really feel about social media. San Francisco, CA: Common Sense.

20 Boulianne, Shelley, and Yannis Theocharis. (2020). "Young People, Digital Media, and Engagement: A Meta-analysis of Research." Social Science Computer Review 38, no. 2: 111–27.

21 Earl, Jennifer S. and Thomas V. Maher. 2017. "Recruiting Inclusiveness: Intersectionality, Social Movements, and Youth Online." Research in Social Movements, Conflicts and Change 41:279-311.

22 Jenkins, Henry, Sangita Shresthova, Liana Gamber-Thompson, Neta Kligler-Vilenchik, and Arely Zimmerman. (2016). By Any Media Necessary. New York: NYU Press.

23 Maher, Thomas V., and Jennifer Earl. (2019). "Barrier or Booster? Digital Media, Social Networks, and Youth Micromobilization." Sociological Perspectives 62, no. 6: 865–83.

24 Kahne, Joseph, Nam-Jin Lee, and Jessica T. Feezell. (2013). "The Civic and Political Significance of Online Participatory Cultures among Youth Transitioning to Adulthood." Journal of Information Technology and Politics 10, no. 1: 1–20.

25 McArthur, Sherell A. (2016). "Black Girls and Critical Media Literacy for Social Activism." English Education 48, no. 4: 362–79.

26 Pew Research Center. (2022). "Connection, Creativity and Drama: Teen Life on Social Media in 2022".

27 Terriquez, Veronica, Randy Villegas, Roxanna Villalobos, and Jiayi Xu. (2020). "The Political Socialization of Latinx Youth in a Conservative Political Context." Journal of Applied Developmental Psychology 70: article 101188.

28 Charmaraman, Linda, Olaide Sode, and David Bickham. (2020). "Adolescent Mental Health Challenges in the Digital World." In Technology and Adolescent Health: In Schools and Beyond, edited by Megan A. Moreno and Andrea J. Hoopes, 283–304 (London: Academic Press, 2020).

29 Guinta, Maggie R., and Rita M. John. (2018). "Social Media and Adolescent Health." Pediatric Nursing 44, no. 4: 196–201.

30 U.S. Department of Health and Human Services. (2021). Protecting Youth Mental Health: The U.S. Surgeon General's Advisory. Office of the U.S. Surgeon General.

31 Gordon, A., & Brown, P. (2023, January 30). Surgeon general says 13 is 'too early' to join social media. CNN. Retrieved from https://www.cnn.com/2023/01/29/health/surgeon-general-social-media/index.html

32 Johnson, S. B., Blum, R. W., & Giedd, J. N. (2009). Adolescent maturity and the brain: the promise and pitfalls of neuroscience research in adolescent health policy. The Journal of adolescent health: official publication of the Society for Adolescent Medicine, 45(3), 216–221. https://doi.org/10.1016/j.jadohealth.2009.05.016

33 Katz, Roberta, Sarah Ogilvie, Jane Shaw, and Linda Woodhead. (2022). Gen Z Explained: The Art of Living in a Digital Age. Chicago: University of Chicago Press.

34 Centers for Disease Control and Prevention. (2023). Youth Risk Behavior Survey: Data Summary and Trends Report. U.S. Department of Health and Human Services. https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBS_Data-Summary-Trends_Report2023_508.pdf

35 Haidt, J., & Twenge, J. (ongoing). Social media and mental health: A collaborative review. Unpublished manuscript, New York University. Accessed at tinyurl.com/SocialMediaMentalHealthReview

36 Mills, Jennifer S., Sarah Musto, Lindsay Williams, and Marika Tiggemann. (2018). "'Selfie' Harm: Effects on Mood and Body Image in Young Women." Body Image 27: 86–92.

37 Twenge, Jean M., and Gabrielle N. Martin. (2020). "Gender Differences in Associations between Digital Media Use and Psychological Well-Being: Evidence from Three Large Datasets." Journal of Adolescence 79: 91–102.

38 Tynes, Brendesha M., Sophie Hiss, Allison M. Ryan, and Chad A. Rose. (2015). "In-School vs. Online Discrimination: Effects on Mental Health and Motivation among Diverse Adolescents in the United States." In Routledge International Handbook of Social Psychology of the Classroom, edited by Christine M. Rubie-Davies, Jason M. Stephens, Penelope Watson, 112–21. Milton Park, UK: Routledge, 2015.

39 Michikyan, Minas, and Carola Suárez-Orozco. (2016). "Adolescent Media and Social Media Use: Implications for Development." Journal of Adolescent Research 31, no. 4: 411–14.

40 Raudsepp, Lennart, and Kristjan Kais. (2019). "Longitudinal Associations between Problematic Social Media Use and Depressive Symptoms in Adolescent Girls." Preventive Medicine Reports 15: 1–5.

41 Riehm, Kira E., Kenneth A. Feder, Kayla N. Tormohlen, Rosa M. Crum, Andrea S. Young, Kerry M. Green, Lauren R. Pacek, Lareina N. La Flair and Ramin Mojtabai. (2019). "Associations between Time Spent Using Social Media and Internalizing and Externalizing Problems among US Youth." JAMA Psychiatry 76, no. 12: 1266–73.

42 Orben, A., Przybylski, A.K., Blakemore, SJ. et al. (2022). Windows of developmental sensitivity to social media. Nat Commun 13, 1649. https://doi.org/10.1038/s41467-022-29296-3

43 Chae, Jiyoung. (2017). "Explaining Females' Envy toward Social Media Influencers." Media Psychology 21, no. 2: 246–62.

44 Mills, Jennifer S., Sarah Musto, Lindsay Williams, and Marika Tiggemann. (2018). "'Selfie' Harm: Effects on Mood and Body Image in Young Women." Body Image 27: 86–92.

45 Svensson, R., Johnson, B. & Olsson, A. (2022). Does gender matter? The association between different digital media activities and adolescent well-being. BMC Public Health 22, 273. https://doi.org/10.1186/s12889-022-12670-7

46 Hogue, Jacqueline V., and Jennifer S. Mills. (2019). "The Effects of Active Social Media Engagement with Peers on Body Image in Young Women." Body Image 28 :1–5.

47 Meeus, Anneleen, Kathleen Beullens and Steven Eggermont. (2019). "Like Me (Please?): Connecting Online Self-Presentation to Pre- and Early Adolescents' Self-Esteem." New Media & Society 21(11-12):2386-403.

48 Thai, H., Davis, C. G., Mahboob, W., Perry, S., Adams, A., & Goldfield, G. S. (2023). Reducing social media use improves appearance and weight esteem in youth with emotional distress. Psychology of Popular Media. Advance online publication. https://doi.org/10.1037/ppm0000460

49 Dorol-Beauroy-Eustache, Ophély, and Brian L. Mishara. (2021). "Systematic Review of Risk and Protective Factors for Suicidal and Self-Harm Behaviors among Children and Adolescents Involved with Cyberbullying." Preventive Medicine 152: 1–12.

50 Festl, Ruth, and Thorsten Quandt. (2016). "The Role of Online Communication in Long-Term Cyberbullying Involvement among Girls and Boys." Journal of Youth and Adolescence 45, no. 9: 1931–45.

51 Centers for Disease Control and Prevention. (2023). Youth Risk Behavior Survey: Data Summary and Trends Report. U.S. Department of Health and Human Services. https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBS_Data-Summary-Trends_Report2023_508.pdf

52 Pew Research Center (2022). "Teens and Cyberbullying 2022."

53 Holfeld, Brett, and Faye Mishna. (2019). "Internalizing Symptoms and Externalizing Problems: Risk Factors for or Consequences of Cyber Victimization?" Journal of Youth and Adolescence 48: 567–80.

54 Rudolph, K. D., & Dodson, J. F. (2022). Gender Differences in Friendship Values: Intensification at Adolescence. The Journal of Early Adolescence, 42(4), 586–607. https://doi.org/10.1177/02724316211051948

55 Francisco, Sara C., Felmlee, Diane H. (2022). "What Did You Call Me? An Analysis of Online Harassment Towards Black and Latinx Women." Race and Social Problems 14: 1–13.

56 Rozado, D., Hughes, R., & Halberstadt, J. (2022). Longitudinal analysis of sentiment and emotion in news media headlines using automated labelling with Transformer language models. PLOS ONE, 17(10), e0276367. https://doi.org/10.1371/journal.pone.0276367

57 Robertson, C.E., Pröllochs, N., Schwarzenegger, K. et al. (2023). Negativity drives online news consumption. Nat Hum Behav (2023). https://doi.org/10.1038/s41562-023-01538-4

58 Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. Review of General Psychology, 5(4), 323–370. https://doi.org/10.1037/1089-2680.5.4.323

59 Fear and anxiety. The Digital Wellness Lab. (2021, January 14). https://digitalwellnesslab.org/parents/fear-and-anxiety/

60 Clayton, Katherine, Spencer Blair, Jonathan A. Busam, Samuel Forstner, John Glance, Guy Green, Anna Kawata, Akhila Kovvuri, Jonathan Martin, Evan Morgan, Morgan Sandhu, Rachel Sang, Rachel Scholz-Bright, Austin T. Welch, Andrew G. Wolff, Amanda Zhou, and Brendan Nyhan. (2020). "Real Solutions for Fake News? Measuring the Effectiveness of General Warnings and Fact-Check Tags in Reducing Belief in False Stories on Social Media." Political Behavior 42: 1073–95.

61 Kahne, Joseph, and Benjamin Bowyer. (2017). "Educating for Democracy in a Partisan Age: Confronting the Challenges of Motivated Reasoning and Misinformation." American Educational Research Journal 54(1):3-34.

62 Howard, Philip N., Lisa-Maria Neudert, and Nayana Prakash. (2021). Digital Misinformation/Disinformation and Children. New York: UNICEF.

63 Piazza, James A. (2021). "Fake News: The Effects of Social Media Disinformation on Domestic Terrorism." Dynamics of Asymmetric Conflict: Pathways toward Terrorism and Genocide 15, no. 1:55–77.

64 Shu, Kai, Amrita Bhattacharjee, Faisal Alatawi, Tahora H. Nazer, Kaize Ding, Mansooreh Karami, and Huan Liu. (2020). "Combating Disinformation in a Social Media Age." WIREs Data Mining and Knowledge Discovery 10, no. 6: 1–23.

65 Donaldson, Marcus R. (2021). "Circulating Racial Trauma: How Black College-Age Students Experience and Cope with Police Brutality on Social Media." Master's thesis, Arizona State University.

66 Ortega-Williams, Anna. (2021). "Organizing as 'Collective-Self' Care among African American Youth in Precarious Times." Journal of African American Studies 25, no. 1: 3–21.

67 Pew Research Center. (2022). "Connection, Creativity and Drama: Teen Life on Social Media in 2022".

68 Vigderman, A. (2023). How much would you sell your social media data for? Security.org. Retrieved from https://www.security.org/blog/how-much-would-you-sell-your-social-media-data-for/

69 Hengesbaugh, B., & Valetk, H. (2023). FTC is escalating scrutiny of dark patterns, children's privacy. Bloomberg Law. Retrieved from https://news.bloomberglaw.com/us-law-week/ftc-is-escalating-scrutiny-of-dark-patterns-childrens-privacy

70 Montgomery, K. C., Chester, J., & Milosevic, T. (2017). Children's Privacy in the Big Data Era: Research Opportunities. American Academy of Pediatrics.

71 Ekō. (2023). Suicide, Incels, and Drugs: How TikTok's deadly algorithm harms kids.

72 Thorn. (2023). Responding to Online Threats: Minors'

Perspectives on Disclosing, Reporting, and Blocking in 2021.

73 Bezáková, Zuzana, Adam Madleňák, and Marek Švec. (2021). "Security Risks of Sharing Content Based on Minors by Their Family Members on Social Media in Times of Technology Interference." Media Literacy and Academic Research 4, no. 1: 53–69.

74 Louie, Dustin W. (2017). "Social Media and the Sexual Exploitation of Indigenous Girls." Girlhood Studies 10, no. 2: 97–113.

75 Lykousas, Nikolaos, and Constantinos Patsakis. (2021). "Large-Scale Analysis of Grooming in Modern Social Networks." Expert Systems with Applications 176, https://doi.org/10.1016/j.eswa.2021.114808.

76 AB-2273 The California Age-Appropriate Design Code Act. Bill Text - AB-2273 The California Age-Appropriate Design Code Act. (2022). Retrieved from https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB2273

77 Chavez, K. (2023, March 20). NetChoice sues California to protect families & free speech online. NetChoice. Retrieved from https://netchoice.org/netchoice-sues-california-to-protect-families-free-speech-online/

78 S.3663 - 117th Congress (2021-2022): Kids Online Safety Act. (2022, December 15). https://www.congress.gov/bill/117th-congress/senate-bill/3663/text

79 Pew Research Center. (2020). "Parenting Children in the Age of Screens."

80 Ibid

81 Ibid

82 Ashcraft, Catherine, Brad McLain, and Elizabeth Eger. (2016). Women in Tech: The Facts. Boulder, CO: National Center for Women and Technology.

83 Hammonds, Evelynn, Valerie Taylor, and Rebekah Hutton, eds. (2022). Transforming Trajectories for Women of Color in Tech. Washington, DC: National Academies Press.

84 Hammonds, Evelynn, Valerie Taylor, and Rebekah Hutton, eds. 2022. Transforming Trajectories for Women of Color in Tech. Washington, DC: National Academies Press.

85 Lee, Clifford, and Elisabeth Soep. (2023). Code for What? Computer Science for Storytelling and Social Justice. Cambridge, MA: MIT Press.

86 Harrison, S. (2019). Five Years of Tech Diversity Reports-and little progress. Wired. Retrieved from https://www.wired.com/story/five-years-tech-diversity-reports-little-progress/

87 Cadaret, M. C., Hartung, P. J., Subich, L. M., & Weigold, I. K. (2017). Stereotype threat as a barrier to women entering engineering careers. Journal of Vocational Behavior, 99, 40–51. https://doi.org/10.1016/j.jvb.2016.12.002

88 Shapiro, J.R., Williams, A.M. (2012). The Role of Stereotype Threats in Undermining Girls' and Women's Performance and Interest in STEM Fields. Sex Roles 66, 175–183. https://doi.org/10.1007/s11199-011-0051-0

89 Rideout, Victoria, and Vikki S. Katz. (2016). Opportunity for All? Technology and Learning in Lower-Income Families. New York: Joan Ganz Cooney Center at Sesame Workshop.

90 Hammonds, Evelynn, Valerie Taylor, and Rebekah Hutton, eds. 2022. Transforming Trajectories for Women of Color in Tech. Washington, DC: National Academies Press.

91 Power on: How we can supercharge an equitable digital future. (2023). UN Women – Headquarters. Retrieved from https://www.unwomen.org/en/news-stories/explainer/2023/02/power-on-how-we-can-supercharge-an-equitable-digital-future?

92 State of Women in Tech. Adeva. (n.d.). Retrieved from https://adevait.com/state-of-women-in-tech

93 Zippia. "25+ Telling Diversity In High Tech Statistics [2023]: Tech Demographics + Trends" Zippia.com. Nov. 7, 2022, https://www.zippia.com/advice/diversity-in-high-tech-statistics/

94 Population, female (% of total population). Data. (2022). Retrieved from https://data.worldbank.org/indicator/SP.POP.TOTL.FE.ZS

95 Long, B. (2023, March 22). Why do we need more women in tech? Look at the Data. Insight Global. Retrieved from https://insightglobal.com/blog/advance-women-in-tech/

96 Radulovski, A. (2020, February 19). Women impact tech: Why do we need more women in tech? Women in Tech Network. Retrieved from https://www.womentech.net/en-us/blog/women-impact-tech-why-do-we-need-more-women-tech

97 Haidt, J., & Twenge, J. (ongoing). Social media and mental health: A collaborative review. Unpublished manuscript, New York University. Accessed at tinyurl.com/SocialMediaMentalHealthReview

98 César G. Escobar-Viera, Ariel Shensa, Nicholas D. Bowman, Jaime E. Sidani, Jennifer Knight, A. Everette James, and Brian A. Primack. (2018). Passive and Active Social Media Use and Depressive Symptoms Among United States Adults. Cyberpsychology, Behavior, and Social Networking.Jul 2018.437-443.http://doi.org/10.1089/cyber.2017.0668

99 Thorisdottir, I. E., Sigurvinsdottir , R., Asgeirsdottir , B. B., Allegrante, J. P., & Sigfusdottir, I. D. (2019). Active and passive social media use and symptoms of anxiety and depressed mood among Icelandic adolescents. Cyberpsychology, Behavior and Social Networking. https://doi.org/10.1089/cyber.2019.0079

100 Office for Human Research Protections. (n.d.). Research with children faqs. HHS.gov. Retrieved from https://www.hhs.gov/ohrp/regulations-and-policy/guidance/faq/children-research/index.html

101 Walsh, C. (2021, October 12). Everything you need to know about regulatory sandboxes. State Policy Network. Retrieved from https://spn.org/articles/what-is-a-regulatory-sandbox/

102 Department of Economic and Social Affairs, & Kwok, W. M., Sandboxing and experimenting digital technologies for sustainable development [Policy Brief] (2021). United Nations. Retrieved from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_123.pdf.