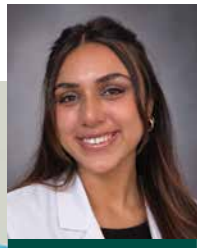
The digitally native patient:

Reimagining adolescent-centered care in a networked era



HELEN H. GLASER STUDENT ESSAY AWARD WINNER

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Introduction

"Libby," a 19-year-old patient, sinks into a chair in the waiting room. The gentle hum of a Disney movie playing on the television fills the

silence. Next to her foot rests a plastic shape-sorter, one block still halfway to its matching cutout, as if the last toddler who touched it was whisked away mid-play.

She folds into her chair, instinctively pulling out her phone. After sending a quick text to a friend, she falls into the steady, comforting motion of scrolling. A TikTok creator her age appears on screen, blending foundation on her face as she explains how she manages anxiety in college. Double tap. Swipe. Another girl walks through her campus offering advice about habits to leave behind in the new year. When the medical assistant calls her name, Libby slips her phone into her pocket. With it go the digital conversations, questions, and uncertainties that shape her understanding of health, none of which anyone in the clinic will ask about.

Libby embodies today's digitally native adolescents, whose lived experiences and online worlds are frequently unacknowledged in healthcare. As time passes, the gap between the forms of support adolescents actually use and the resources clinicians expect them to use is widening. Fewer than half of adolescents and young adults aged ten to 24 in the United States receive an annual well-visit, while nearly all reported using the internet daily.[1] Social media platforms and online communities have become central spaces for seeking health information, receiving emotional support, and making medical decisions. Adolescents consult TikTok to interpret symptoms, turn to Reddit to discuss chronic illness, or join peer-to-peer communities that offer validation and shared experience.[1,2] Medical discourse often highlights the risks of these behaviors, particularly in the context of rising mental health concerns,[3] yet the reality is that digital platforms now function as an informal, parallel health system for many youth.

Recognizing this role of online tools does not mean endorsing every effect of social media. It calls for understanding that adolescent-centered care begins by acknowledging that adolescents arrive with digital histories and online experiences that shape their understanding of health. Only by recognizing these realities can modern healthcare build systems that meet young people where they are socially, emotionally, and digitally. To provide care that is truly comprehensive and equitable, clinicians and health systems must move away from treating digital spaces as threats to be minimized and instead recognize them as formative environments that can be understood, integrated, and strategically leveraged.

Understanding adolescence and its clinical significance

Adolescence is a stage defined by profound biological, psychological, and social transformation, during which health behaviors shape long-term trajectories of chronic illness, mental well-being, and healthcare engagement.[4] While traditionally defined as the period between ages ten and 24, this definition is increasingly recognized as fluid and shaped by cultural, geographic, and socioeconomic contexts.[1] The prefrontal cortex develops more slowly than the emotion-driven limbic system, creating a neurological imbalance that contributes to heightened emotional responsiveness and risk-taking.[5] During this same period, adolescents form a clearer sense of identity while facing increased vulnerability to mental health conditions such as depression, anxiety, eating disorders, and substance use, with approximately one in five experiencing a mental health disorder annually.[6] Socially, adolescents become increasingly influenced by peers, both offline and online, with these relationships shaping health behaviors that can be protective or risky, depending on context.[4]

During adolescence, the clinical importance of well visits has increased, but adolescent utilization has declined.[1] The decline becomes particularly steep in late adolescence, when school-based structures fade, parental oversight decreases, and young people gain more autonomy over their schedules. In 2014, more than a quarter of 16- and 17-year-olds had not received a well-visit in the previous year, with rates of absence increasing further among young adults.[7] This pattern reflects a broader trend: adolescents are among the least engaged populations in the US healthcare system, despite being at heightened risk for the onset of behavioral health conditions, substance use, and chronic disease.

The consequences of missed preventive care extend beyond physical health. Adolescents experience a disproportionate burden of mental health concerns, with one in five meeting criteria for a mental health disorder annually.[6] Depression, anxiety, disordered eating, self-harm, and substance use often first emerge during this developmental window. Regular primary care visits provide critical opportunities for early identification and intervention, yet many youth do not reach the clinic until crises develop, if at all. This gap has contributed to rising rates of adolescent emergency department use for mental health concerns and worsening outcomes among vulnerable populations.[8]

Chronic medical conditions further complicate this landscape. Between 20 and 30 percent of adolescents live with at least one chronic illness, ranging from asthma and diabetes to inflammatory bowel disease and congenital cardiac conditions.[9] Advances in pediatric medicine have enabled more children with complex conditions to reach adolescence, but the transition from pediatric to adult care remains fragmented and poorly coordinated.[10] Missed well-visits and inconsistent primary care engagement amplify the risk of lapses in treatment, medication nonadherence, and avoidable complications.[10] Adolescents from low-income families, communities of color, and LGBTQ+ identities are more likely to have inconsistent healthcare relationships and diminished trust, further increasing the likelihood of disengagement.[11]

Beyond the direct clinical consequences, underutilization of well-visits disrupts the relational foundations of primary care. Adolescence is a period in which trust, confidentiality, and continuity are particularly important. Without regular contact with a trusted clinician, adolescents may lack a reliable source of guidance during periods of emotional upheaval, identity formation, or new health challenges. The absence of a stable healthcare relationship makes it more difficult for young people to navigate complex decisions, from contraception to mental health treatment to managing chronic illness.[12]

It is clear that adolescence is a time of elevated health vulnerability and increased need for preventive care, yet it is also a stage marked by disengagement from formal healthcare systems. Traditional explanations for this gap, such as adolescent invincibility, stigma, or lack of awareness, fail to account for the broader environments in which young people live and learn.[3,4]

A biosocial lens on why adolescents fall through the cracks

The decision to seek or avoid care is shaped by a complex interplay of biological development, social relationships, economic pressures, and political context. A biosocial lens reveals how these forces converge, making formal healthcare feel inaccessible or unresponsive to many adolescents, driving them toward digital spaces for information and support.

Peer influences carry significant weight during adolescence, which draws young people toward spaces where they feel understood and connected.[12] Clinical settings often feel hierarchical, rushed, or intimidating, particularly for youth navigating stigma, marginalization, or identity development. Many adolescents describe medical encounters in which they felt dismissed, misunderstood, or judged, experiences that make them less likely to return to care.[3] These experiences foster reluctance to seek care, particularly for sensitive concerns related to mental health, sexuality, substance use, or chronic illness. On platforms such as TikTok, Reddit, and YouTube, young people encounter peers who share their raw experiences with chronic illnesses or the confusion of navigating healthcare.[3] These interactions provide emotional validation that traditional clinical encounters may lack. Online platforms are especially important sources of connection and resilience for adolescents from marginalized groups, including Black, Latino, and LGBTQ+ youth.[15] A 2024 national report found that nearly three-quarters of LGBTQ+ adolescents described social media as essential for combating loneliness.[16]

Economic structures also shape adolescent engagement. The prevailing fee-for-service model rewards high patient volume and short visits, leaving little time for the sustained conversations adolescents require about mental health, identity, or stress.[3] Families facing transportation barriers, rigid work schedules, or insurance instability encounter additional obstacles to consistent care. Even motivated adolescents may lose access to routine visits when caregivers cannot afford to miss work or navigate insurance changes. Meanwhile, digital platforms are free, immediate, and accessible at any time, features that unintentionally make them more practical than formal healthcare for many youth. While this access is uneven and unregulated, its immediacy fills a gap created by broader healthcare financing structures.

Public discourse often portrays youth digital engagement as inherently harmful, while platform-level reductions in content moderation have made online spaces less reliable.[3,17] Yet restrictive policies or cultural alarmism fail to acknowledge that adolescents rely on these platforms to cope, connect, and learn, and they risk severing young people from lifelines of community and information without addressing the systemic gaps in formal healthcare that drive them online in the first place.

Taken together, these determinants create conditions in which digital spaces become the most accessible and affirming environments for adolescents seeking help or understanding. Online platforms offer immediacy, community, and relatability—qualities that are often missing from traditional care.[17]

Digital spaces as an informal parallel health system

Digital spaces were not designed to serve healthcare functions, yet they now operate as an informal parallel system on which adolescents rely for information, emotional support, triage, and practical guidance. This emergent ecosystem is neither wholly beneficial nor inherently harmful. It reflects how adolescents adapt to the structural limitations of formal care and seek belonging in environments that resonate with their developmental needs. However, adolescents do not turn to these tools because they are indifferent to clinicians. Many adolescents wish to connect with a clinician, but negative encounters can make them hesitant to seek help again. Additionally, even though primary care is meant to serve as the first stop for health concerns, adolescents often see it as addressing physical issues rather than emotional or mental health needs.[3]

Online platforms allow adolescents to explore questions about their bodies and minds in spaces that feel accessible and nonjudgmental. This dynamic is particularly significant for marginalized youth such as adolescents of color, LGBTQ+ youth, and those with chronic illness, who frequently report feeling misunderstood or dismissed in clinical settings. Online anonymity and community allow them to articulate concerns and learn from peers with similar experiences, building a preliminary foundation of knowledge that can either facilitate or complicate subsequent interactions with the healthcare system.[17]

The communities where young people exchange stories, advice, and encouragement often function as emotional first responders, available at any hour and communicating in styles that feel authentic and culturally familiar. While they do not replace professional care, digital platforms may fill relational gaps left by a healthcare system that is often stretched thin. They offer what adolescents consistently report needing most: a sense of being heard, understood, and less alone.

In addition, digital creators speak in the vernacular of youth culture through storytelling, humor, aesthetics, and shared social references.[3] Creators with lived experience of chronic illness, therapy, trauma, or navigating insurance systems produce content that is both informational and emotionally resonant. Although these relationships are parasocial rather than personal, many adolescents find them credible because the content aligns with their identities and experiences. When a creator who "looks like me" or "talks like me" demonstrates how to manage migraines, undergo an infusion, or attend a first therapy session, health behaviors become more accessible and less intimidating. These narratives translate complex medical concepts into forms adolescents understand, often more effectively than traditional health education.

That being said, the benefits of digital platforms do come with real risks. Adolescents may encounter misinformation, content that promotes risky behavior, or negative self-talk.[3] Algorithms created by profit-driven firms prioritize engagement over accuracy, so a search for acne treatments may surface extreme diets, and a query about anxiety may lead to content that heightens distress. Without critical media literacy and often without clinician guidance, adolescents are forced to navigate these hazards on their own. However, we must not focus solely on the risks, as this ignores the root causes of adolescents' reliance on these platforms in the first place. In practice, adolescents have assembled a decentralized and informal set of resources, a "networked clinic" composed of peer stories, creator content, search-based learning, and digital communities. While imperfect and at times dangerous, this ecosystem has emerged in direct response to the limitations of the formal healthcare system. Restrictive policies that limit adolescent access to these platforms do not address these underlying gaps and may further isolate the most vulnerable youth.[20]

Opportunities for clinicians

The existence of this parallel system presents both a challenge and an opportunity for clinicians and healthcare institutions. Recognizing digital platforms as an informal parallel health system does not mean that every clinician must become a content creator. It requires acknowledging adolescents' lived realities and recalibrating how healthcare engages with them. Digital spaces reveal what young people seek in moments of vulnerability, including relatability, immediacy, emotional safety, and practical knowledge.[2,4,17] When clinicians understand these needs, preventive care can be redesigned to strengthen trust, increase utilization, and connect online exploration with in-person care.

A crucial step is recognizing that many adolescents arrive at clinical encounters shaped by what they have already searched, watched, or discussed online. Instead of dismissing these influences, clinicians can invite dialogue by asking what adolescents have seen or heard

online and how that content has shaped their concerns. Such questions normalize digital help-seeking, reveal misconceptions, and create opportunities to collaboratively correct inaccuracies. When adolescents feel their digital experiences are respected rather than criticized, they are more likely to articulate fears, ask questions, and participate fully in their care.

Guiding youth toward credible online resources further strengthens this connection. Once clinicians recognize that adolescents already turn to the internet for information that feels trustworthy, relatable, and developmentally appropriate, they can expand beyond traditional patient education methods such as printed pamphlets. Curating evidence-based videos, and youth-focused educational content allows clinicians to channel adolescents' digital habits toward safer pathways. Over time, such guidance can reduce reliance on unvetted sources and support healthier, more informed decision-making.

Clinicians can also learn from the communicative strengths of digital platforms. Adolescents respond to narrative, visuals, and the lived experiences of others.[3] Incorporating stories, analogies, and visual tools into clinical interactions mirrors the accessibility of digital media and helps adolescents visualize procedures, understand diagnoses, and see peers navigating similar challenges. These forms of communication can facilitate earlier care-seeking, build deeper partnerships, and foster stronger adherence to treatment.[3,17]

To provide adolescents with whole-person care, clinicians must develop digital cultural competence. Just as cultural competence recognizes the influence of race, identity, and community on health, digital cultural competence acknowledges that adolescents' beliefs, language, and expectations are shaped by their online environments. Understanding platform norms, identifying when online content affects health decisions, discussing digital behavior without judgment, and recognizing harmful online communities can help clinicians communicate more effectively and reduce barriers that drive adolescents away from care.

Changes needed in medicine and public health

Structural changes in clinical environments are essential. Adolescents benefit from confidential time with clinicians, longer appointments for psychosocial concerns, continuity with a consistent provider, reduced administrative barriers, and integrated behavioral health support. Involving youth in the co-design of clinic spaces and educational materials can enhance feelings of autonomy, safety, and trust, needs that digital spaces often meet more reliably than traditional care.

Beyond individual encounters, media and storytelling offer powerful tools for adolescent health engagement at the system level. Youth-centered films, digital series, micro-documentaries, and partnerships with trusted creators can reduce stigma, normalize help-seeking, and encourage preventive care. These approaches succeed because they embrace the authenticity and relatability that define digital culture, bridging the gap between the online ecosystem and formal healthcare.

However, these innovations alone cannot fully address the structural forces that shape adolescent health. Economic pressures on primary care, inequities in insurance access, and political debates over youth autonomy continue to influence who receives care and when. Sustainable progress requires broader policy reforms that improve reimbursement for adolescent preventive services, expand school- and community-based care, strengthen confidentiality protections, and integrate evidence-based digital interventions into public health infrastructure. Adolescents turn to digital spaces not because they reject healthcare, but because traditional systems have not evolved to meet their needs.

Reframing digital spaces as a parallel health ecosystem enables healthcare systems to view adolescents not as disengaged patients but as active navigators seeking information and support within the environments available to them. Bridging digital and formal healthcare, therefore, requires a shift from correction to collaboration, from skepticism to curiosity, and from a narrow clinical lens to a youth-centered, developmentally attuned model of care. Embracing the strengths of adolescents' digital worlds, while addressing their limitations, can lay the groundwork for a more responsive, equitable, and humane system that meets young people where they are socially, emotionally, and culturally.

Conclusion

Adolescent disengagement from preventive healthcare is often framed as an issue of individual behavior, a presumed lack of interest, a feeling of invincibility, or misplaced priorities. Yet the patterns examined here suggest a different reality. Adolescents do not turn away from traditional healthcare because they are indifferent to their well-being, but because the structures

intended to support them frequently fail to meet their developmental, emotional, and social needs. Fragmented continuity, brief encounters, logistical barriers, and limited attention to identity and belonging leave young people searching elsewhere for guidance and connection.

Digital spaces have stepped into this void. In the absence of accessible, youth-centered systems, adolescents have assembled informal health networks that offer information, empathy, visibility, and hope. These platforms function as an emergent parallel health ecosystem, meeting needs that formal healthcare has too often overlooked. While online environments carry real risks, their widespread use reflects deeper systemic shortcomings rather than deficits in adolescent judgment.

Recognizing this parallel ecosystem requires a shift in perspective. Instead of treating social media as an adversary, healthcare must acknowledge that digital environments profoundly shape how adolescents interpret health, form identities, and navigate uncertainty. These spaces illuminate what young people seek: connection, continuity, relatability, and explanations grounded in lived experience, needs that are developmental rather than optional.

Creating adolescent-centered care, therefore, requires more than expanding clinic hours or increasing appointment availability. It calls for reimagining how the healthcare system communicates, collaborates, and designs systems for youth. Clinicians must engage with adolescents' digital help-seeking, guide them toward credible online resources, and communicate in ways that reflect the narrative and visual fluency of contemporary youth culture. Health systems must build environments where young people feel heard, respected, and safe, with structures that support autonomy, trust, and sustained relationships.

Meaningful progress also demands attention to the economic and political forces shaping adolescent health, namely inconsistent insurance coverage, time-limited visits, and oversimplified public debates about youth and technology. Lasting change will require investment in adolescent health infrastructure, digital literacy education, and partnerships among healthcare institutions, public health organizations, youth communities, and digital creators.

Ultimately, the question is not whether adolescents will continue turning to digital spaces for health-related support. They will. The question is whether healthcare will adapt to this reality or remain anchored in models misaligned with contemporary adolescence. Recognizing digital platforms as part of the adolescent health environment allows clinicians to meet young people with clarity, compassion, and continuity during one of the most formative stages of life. Adolescents are not passive recipients of care but active navigators of their own health journeys. Their turn toward digital spaces exposes both the limitations of the current system and provides a blueprint for what youth-centered care might become. A healthcare system that listens to these signals and embraces storytelling, community, and culturally aligned communication can bridge the divide between digital exploration and preventive care, creating a more responsive, equitable, and humane model of care for the next generation.

References

1. Esquivel C, Garney W, Wilson K, et al. Social-Ecological Barriers to Access to Healthcare for Adolescents: A Scoping Review. *Int J Environ Res Public Health.* 2021;18(8):4138. doi:10.3390/ijerph18084138.
2. Kollins SH, Flannery J, Goetz K, Akre-Bhide S. Technology Effects and Child Health: Wellness Impact and Social Effects (TECHWISE): Protocol for a prospective, observational, real-world study. *JMIR Res Protoc.* 2025;14:e69358. Published 2025 Jun 19. doi:10.2196/69358
3. Pretorius C, Chambers D, Cowan B. Adolescents' online health information-seeking: A systematic review. *J Med Internet Res.* 2019;21(11):e14087.
4. DeJonckheere M, Zhao A, Lane J, et al. Results of a national text message poll of youth: perspectives on primary care. *J Adolesc Health.* 2020;67(6):814–20. doi:10.1016/j.jadohealth.2020.04.017.
5. Arain M, Haque M, Johal L, et al. Maturation of the adolescent brain. *Neuropsychiatr Dis Treat.* 2013;9:449–461.
6. Bitsko RH, Claussen AH, Lichstein J, et al. Mental Health Surveillance Among Children — United States, 2013–2019. *MMWR Suppl* 2022;71(Suppl-2):1–42. DOI: http://dx.doi.org/10.15585/mmwr.su7102a1.
7. Black LI, Nugent CN, Vahratian A. Access and utilization of selected preventive health services among adolescents aged 10–17. NCHS data brief, no 246. Hyattsville, MD: National Center for Health Statistics. 2016.
8. Alderman EM, Breuner CC. Clinical report: Unique needs of the adolescent. *Pediatrics.* 2019;144(6):e20193150.
9. Yeo M, Sawyer S. Chronic illness and disability. *BMJ.* 2005;330(7493):721–723. doi:10.1136/bmj.330.7493.721.
10. Harris SK, Aalsma MC, Weitzman ER, et al. Research on Clinical Preventive Services for Adolescents and Young Adults: Where Are We and Where Do We Need to Go? *J Adolesc Health.* 2017;60(3):249–260. doi:10.1016/j.jadohealth.2016.10.005.

11. Price JH, Khubchandani J, McKinney M, Braun R. Racial/ethnic disparities in chronic diseases of youths and access to health care in the United States. *Biomed Res Int.* 2013;2013:787616. doi:10.1155/2013/787616.
12. Laursen, B. and Veenstra, R. (2021), Toward understanding the functions of peer influence: A summary and synthesis of recent empirical research. *J Res Adolesc,* 31: 889-907. https://doi.org/10.1111/jora.12606.
13. Laursen B, Veenstra R. Toward understanding the functions of peer influence in adolescent health behavior. *Dev Rev.* 2021;62:100996.
14. Albert D, Chein J, Steinberg L. Peer influences on adolescent decision making. *Curr Dir Psychol Sci.* 2013;22(2):114–20.
15. Chassiakos YR, Radesky J, Christakis D, et al. Children and adolescents and digital media: Technical report. *Pediatrics.* 2016;138(5):e20162593.
16. Fisher CB, Tao X, Ford M. Social media: A double-edged sword for LGBTQ+ youth. *Comput Human Behav.* 2024;156:108194. doi:10.1016/j.chb.2024.108194.
17. Nagata JM, Huang O, Hur JO, et al. Health benefits of social media use in adolescents and young adults. *Curr Pediatr Rep.* 2024;13(1):22. doi:10.1007/s40124-025-00357-7.
18. Faverio M, Anderson M, Park E. Teens, social media and mental health. Pew Research Center; April 22, 2025.
19. National Academies of Sciences, Engineering, and Medicine (NASEM). *The Promise of Adolescence: Realizing Opportunity for All Youth.* Washington, DC: National Academies Press; 2019.
20. McAlister KL, Beatty CC, Smith-Caswell JE, Yourell JL, Huberty JL. Social Media Use in Adolescents: Bans, Benefits, and Emotion Regulation Behaviors. *JMIR Ment Health.* 2024;11:e64626. Published 2024 Nov 4. doi:10.2196/64626.

Unfinished

When Fall's canopy casts its shade
Onto the cortical canvas of memory,
There is a becoming awareness
That age, with its lines and pinched features,
No longer mirrors one's once vibrant image.
So here the daydreaming patron is tempted
To dodge time's hold on the person,
And pose as Spring's once youthful version.

Yet profitably the daydreamer might work life wiser
Than lingering over Spring's past, once lightly regarded.
Better, let him accent features born of earned merit
And bear the wear of tempered youth's spirits.
Urge him, rather, to paint from Fall's pallet,
A portrait of virtues like wisdom, goodwill, and fine deeds
In the smile of the eyes radiating kindly aged creases.

Thus, are Fall's features earned and conserved.
But what of Spring's past?
Can the seasons complete
Through ripe Autumn's force
Without the strength of youth's flushing pulse?

Better still—pose life's portrait unfinished.
Capture the age with its tumbling complexion,
Its kaleidoscope revolving—changing
Once again, again human, *ad infinitum*.

—Samuel Durso, MD, MBA

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