Title: The Role of Social Media in Shaping Child and Adolescent Mental Health

Word count: 4752

Table of Contents:

1. Introduction:

Social media (SM) use involves creating or consuming content on digital forums—such as Facebook, Twitter, TikTok, and Instagram—to interact with other people and communities (1). SM can be considered a commodity, where forum developers profit from user profiles and interactions. Today's children and adolescents (CAs) have been referred to as “digital natives" (2), as they are growing up in an era where SM integrates seamlessly into education, leisure, and communication. With the variety of digital devices today, SM is accessible everywhere (1). A 2021 UK survey on CA SM usage found that almost 25% of three to four-year-olds and 87% of fifteen to sixteen-year-olds possessed their own SM profile (3). While age restrictions exist on most SM platforms, there is a lack of profile moderation.

SM use exceeding two hours per day is associated with problematic use. Problematic SM use is defined as the compulsive overuse of SM to the point that it impairs wellbeing and daily functioning (4). Examples of problematic SM use include cyberbullying, viewing inappropriate content, or developing mental disorders such as eating disorders, anxiety and depression as a result of SM use. The 2022 Health Behaviour in School-aged Children (HBSC) survey found that over one in ten CAs aged 11, 13, and 15 across 44 countries experience problematic SM use (5).

The rise in problematic SM usage parallels concerning trends in child and adolescent mental health (CAMH). NHS Digital Data (6) reports that Child and Adolescent Mental Health Services (CAMHS) received 1.2 million referrals in 2022—a 53% increase since 2019—with projections indicating further growth. It is challenging for mental health professionals to address a multitude of referrals promptly. Furthermore, CAMH concerns are growing amongst parents and educators. Seventy-five per cent of parents participating in the NHS digital 2023 survey reported seeking mental health advice about their child from school staff (43). It is integral that educators are trained in discussing mental health issues that stem from SM. Moreover, the University College of London's Institute of Education found that deficient CAMH costs the UK a loss of £550 billion in earnings (42). There is an economic incentive for policymakers to be involved in improving CAMH. SM's role in CAMH warrants closer examination for the betterment of psychiatry services, education systems and the economy.

Most of the literature selected includes data from North America and Europe, considering both regions have high SM usage and similar intervention approaches. All selected literature must include information relevant to CAMH. The term "young people" is also used in this text, which refers to those under the age of eighteen.

The latest development on Meta SM platforms (e.g., Facebook, Instagram and WhatsApp) is the removal of content fact checkers in the United States (US) (48). The removal of SM fact checkers may promote the spread of false information. It is an integral next step for researchers to see how the removal of fact checkers affects CAs' experiences on SM. Furthermore, there are new generative Artificial Intelligence (AI) features on SM forums, such as chatbots, image, voice, and text generators. There is limited exploration on how new AI features impact CAMH. Existing research highlights SM's impact on CAMH, but managing its risks with current advice remains challenging for families, educators, clinicians, and policymakers. Some literature relies on self-reported survey data, which may underestimate problematic SM use. While these challenges and limitations exist, it is evident that safe SM use must be addressed through a coordinated effort from all stakeholders. A better understanding of SM's role will enable educated decision-making and support strategies to protect CAs' wellbeing.

2. The Benefits of SM:

SM has reached its popularity because CAs, educators, and even CAMHS have benefited from its entertainment, community, education, and seamless communication functions. For CAs specifically, the connections created on SM enhance their social wellbeing and develop networks that can protect and better their mental health. A 2018 survey revealed that 81% of adolescents aged 13–17 felt a sense of connectedness on SM, with two-thirds reporting they are part of a supportive community (7). For example, CAs from the LGBTQ+ community are more likely to make friends online (1), highlighting how SM helps individuals from diverse backgrounds find supportive connections. Moreover, SM serves as a platform for advocacy, allowing CAs to spread awareness on issues they are passionate about,

including mental health (8). In the United Kingdom (UK), a routine CAMH referral can take up to 18 weeks (9), so CAs must have a support network until meeting with a medical professional.

Especially during the COVID-19 pandemic, when in-person interactions were severely limited, SM offered various efficient communication options that helped CAs maintain and create friendships (10). Moreover, SM revolutionised education during the pandemic by offering online teaching platforms (10) (e.g., YouTube) that accommodate different learning styles. SM's accessibility also benefits people with disabilities or illnesses, as they can still participate in live and recorded lessons to stay on track academically. Furthermore, gaining digital skills through various SM platforms may improve CAs' creative and career endeavours (e.g., pursuing a computer science degree or other technology-centred pathways) (11).

Additionally, SM provides access to mental health resources that may directly support CAMHS. Platforms like Instagram and Facebook have screening tools designed to identify safety concerns and direct users to appropriate support services and telephone lines local to their area. In a 2015 study, 57% of inpatient CAs had received mental health support via SM in the two weeks before their psychiatric admission (1). Clinicians, SM developers and policymakers must work together in the safety screening present on SM to ensure forums accurately detect triggering content and dangerous behaviour.

AI chatbots on SM forums open avenues for receiving mental health guidance. For simple mental health queries and concerns, AI chatbots may provide helpful advice for curious CAs and guardians who want to speak to a non-biased source (12). However, AI chatbots are limited in managing complex psychiatric issues, and these forums must program their AIs to direct users toward emergency services if risky behaviour is detected. Information from generative AI may not always be accurate, and it is still in beta stages on many platforms. There is also no guarantee of complete privacy and confidentiality of information shared.

The development of generative AI reminds us that SM is constantly changing and growing to improve user experiences. Guardians and clinicians must stay current with SM updates to participate in discussions with young people to improve their safety and wellbeing.

3. Social Media's Impact on Adolescent Brain Development:

Adolescence is a critical neurodevelopmental stage where individuals prioritise peer opinions and approval (13, 22). Regions involved in social reward pathways, such as the ventral striatum, are naturally more active during adolescence. Today's adolescents maintain peer connections primarily through SM, receiving instant and continuous feedback about what is socially acceptable or rejected. Receiving instant and constant feedback can significantly influence adolescent emotional and cognitive development (13).

Several neuroimaging studies prove heightened neural activity in the brain's rejection and reward processing influenced by habitual SM usage (13, 22, 44). A survey of adolescents and young adults' reactions to rejection based on their SM profile picture showed increased activity in the medial prefrontal cortex in both subjects (13). Adolescents further exhibited heightened pupil dilation in response to rejection. The literature suggests that these neural reactions imply that adolescents using SM have developed more intense rejection expectations (13). Strongly expecting rejection influences one's desire to take risks (13). It is important that adolescents feel confident in taking "safe risks", such as applying to a challenging job, for the betterment of the economy.

Furthermore, neuroimaging showed that positive reinforcement from SM, such as likes and favourable comments, activates key reward-related brain regions, including the nucleus accumbens, ventral striatum, ventromedial prefrontal cortex, and ventral tegmental area (13, 44). Interacting with other users' popular SM images also stimulates neural reward pathways (23). Adolescents enjoy participating in popular content to feel more socially accepted. Reward neural regions are also activated in the brain's response to pleasure in other contexts, such as gambling. Activating reward regions of the brain regularly may contribute to addictive habits both with SM use or other activities (e.g. substance misuse).

Future literature should better understand which CAs are most vulnerable to neuropsychiatric changes from habitual SM use (13). Moreover, it is important to study gender differences in neural development and SM use, considering differences in puberty onset. Additionally, limited studies have

examined the long-term complications of frequently activating these neural pathways. It is integral to see how habitual SM usage during adolescence impacts brain development in other stages of life, such as adulthood and advanced years. The neural responses to SM use described in several works of literature underscore the importance of controlled SM use during the formative stages of life.

4. Addictive Patterns in Social Media Use:

SM addiction can be described as an excessive and compulsive desire to engage with SM to the extent that it disrupts various aspects of life, including academics, work, relationships, and mental wellbeing (30). Although SM addiction is not officially classified as a mental disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (30), it has become a growing concern for guardians and educators. SM is designed to be addictive, where algorithms detect users' interests and continuously provide content to keep users online (35). The Centre for Addiction and Mental Health in Ontario, Canada, found that 86% of Ontario students log into SM sites daily (30).

Bandura's social cognitive theory helps explain addictive behaviour associated with SM (32), where CAs are driven by the need for peer validation, likes, comments and a lack of self-regulation. CAs at risk of SM addiction are often those with pre-existing mental health conditions such as anxiety and depression (30, 31). For instance, a CA suffering from depression may turn to SM and receive positive feedback in the form of likes and favourable comments. The positive social feedback that temporarily alleviates their low mood deepens their reliance on SM for emotional satisfaction. While CAs perceive benefits from extended use, constant engagement can lead to a disconnection from real-life social interactions, which may exacerbate feelings of loneliness and anxiety.

The fear of missing out (FOMO) (32) compels youth to remain constantly up-to-date with SM developments to avoid feeling excluded. FOMO often results in compulsive behaviours akin to substance-related addictions. Examples include withdrawal symptoms when offline, increased tolerance for prolonged online activity, and relapse into harmful SM habits (32). CAs often express frustration

towards guardians and educators who restrict or limit their SM access. CAs may seek alternative access to SM when restrictions are placed, such as borrowing a peer's device.

A primary concern for educators and guardians is the decline in academic performance linked to SM addiction. Many students who struggle with SM overuse face challenges related to time management and distractibility, which ultimately affects their schoolwork (31). Improving academic performance, quality of sleep, better physical health and the discovery of new hobbies may motivate CAs to limit SM use. Determining SM use motivators and deterrents is key to better understanding addiction causes and resolutions (30).

The Centre for Addiction and Mental Health in Ontario recommends psychoeducation to prevent addictive patterns and promote screen time limits (30). The province of Ontario has implemented media literacy into its curriculum, where youth learn about safe internet use (30). Incorporating education on excessive and compulsive SM use in local curriculums can protect young people from problematic SM use. Family-based therapy (FBT) is beneficial in addressing adolescent substance addictions (44). FBT for SM overuse can improve family communications and dynamics to reduce SM use within the home unit. For the future of psychiatry, it is interesting to see if "SM addiction" will ever become a part of the DSM-5. SM addiction requires a more concrete and consistent definition, increased research into the concept, and further differentiation from other disorders such as "Internet Gaming Disorder".

5. Cyberbullying and Cyber Safety:

Cyberbullying is a unique form of bullying where aggressors can repeatedly cause distress to individuals over SM and digital devices (14). Cyberbullying may present itself as the sharing of inappropriate images, sending disrespectful messages, and even the impersonation of an individual (14). As previously mentioned, HBSC conducted a study in 2022 where they found that one in six CAs experience cyberbullying (5). Interestingly, HBSC's survey also found that girls are less likely to report cyberbullying than boys, which may suggest the need for gender-specific interventions to promote online safety (5).

Cyberbullying presents unique challenges for CAs, as content shared online can have a long-lasting digital footprint (15). While CAs seek to be free from cyberbullying, they also struggle to give up their SM and online presence (16). Compared to physical and verbal bullying, cyberbullying is more strongly linked to deteriorating CAMH and academic performance (14). Cyberbullying is associated with heightened rates of depression, anxiety, emotional distress, suicidal ideation, and substance abuse (14, 16).

Cyberbullying poses safety concerns for parents where aggressors may be adults (17). While age restrictions exist on SM platforms, these guidelines are easily bypassed on many forums, as there is no reliable system to verify users' ages. Moreover, SM contains explicit content, including depictions of violence, substance abuse, or self-harm. Viewing large quantities of violent content may normalise dangerous and aggressive behaviours among CAs (18). Studies suggest that exposure to online content regarding self-harm or suicidal ideation can increase the risk of suicidality among vulnerable CAs (19). While SM platforms provide features like "block" and "report", these are often insufficient, as distressing content can be saved, and bullies easily create new accounts to continue targeting their victims. Part of which might instigate cyberbullying is oversharing content on SM (20). Oversharing is one of the most common forms of problematic SM use, where personal content is shared at a very high frequency (20). Some viewers may find overshared content irritating, resulting in negative feedback and shaming online (20). Sharing sexually explicit content can have severe consequences, including the potential for charges related to child pornography (21). SM developers must improve safety interventions, including implementing more robust age verification systems and stricter moderation of harmful content.

Some pieces of literature suggest that CAs may be less comfortable discussing cyberbullying with parents and school staff because they worry about consequences and familiarity with the perpetrator involved (14). Clinicians are often the first point of contact for mental health issues, so they should be adept at recognising the signs and symptoms of cyberbullying. Examples include CAs persistently avoiding attendance to school, sleep disturbances, and declining academic performance (14). CAMH consultations should inquire about online experiences and peer relationships on SM to build a safe space

to discuss cyberbullying (14). These consultations can also be used to educate families about cyberbullying and open discussions with their children about online interactions. In order to prevent cyberbullying, several studies recommend that professional organisations be invited to teach CAs about safe SM use in schools and community curricula (15, 16). A proactive approach involving all stakeholders is essential in promoting cyber safety and managing cyberbullying.

6. Screen Time and Sleep Dysregulation:

Deficient sleep can be a sign of existing mental illness or can lead to poor mental health outcomes (45). For instance, a child may be anxious due to a lack of sleep, or they may experience difficulty sleeping because of existing depression. Developing good sleep hygiene benefits mental wellbeing in all young people, including those with existing mental health conditions (46, 47). Adolescents particularly report poor quality of sleep, which may result in educational disadvantages and safety risks in the workforce; therefore, sleep hygiene a priority for educators and employers. Considering that sleep disturbances are associated with an increased risk of adolescent suicide (25), caregivers and guardians need to be attentive about sleep quality in young people.

Effective sleep hygiene practices include avoiding digital devices before bedtime, developing a consistent sleep-wake routine and minimising evening social and physical stimulation (28). Several pieces of literature describe how excessively using SM and digital devices closer to bedtime contributes to poor sleep quality and reduced sleep duration (24, 25, 26). SM use impacts sleep uniquely compared to other forms of screen time, media, and socialisation, considering SM is always accessible (47). The COVID-19 pandemic exacerbated the reliance on SM and other digital forums (27). A comparative study of high school students' behaviour before and during the pandemic found that higher levels of SM use, which occurred during the pandemic, correlated with increased depression scores and more severe emotional dysregulation (24).

Furthermore, a separate study involving 576 high school students revealed that, on average, students engaged with digital devices for seven hours a day, while a third reported getting only six hours

of sleep each night (25). According to the National Sleep Foundation, CAs are recommended, on average, eight to eleven hours of sleep daily (29). Sixty per cent of the students involved in this study had a cellphone in their bedroom (25), which encourages the usage of SM before sleep and immediately after waking.

It is integral to create comprehensive sleep hygiene guidelines addressing safe SM use. By educating young people on sleep hygiene at school and during CAMH consultations, there is the potential to prevent poor mental health outcomes and better existing mental health issues. It is essential to assess the attitudes of CAs who prioritise SM use over sleep (47). Guardians can also help their CAs by following a sleep-wake routine as a family and removing SM access before bedtime.

7. Body Image:

NHS England's 2021 targets for eating disorders (ED) were not met, prompting the Royal College of Psychiatrists to call for increased investment in CAs' ED services (38). One critical element to consider is the growing influence of SM on young people's body image (BI). SM influences CAs' perception of BI positively and negatively, where online content can include a mixture of body types and messages promoting eating habits. Young people suffering from existing eating problems (EPs) and EDs are especially vulnerable to SM content focusing on BI (35).

According to the NHS Digital 2023 Survey (36), 59.4% of seventeen to nineteen-year-old participants reported experiencing EPs. EPs continue to significantly impact the lives of many young people, with females being the most affected demographic (36). Young women are especially vulnerable to SM's influence on BI, as they engage more frequently with content focusing on appearances and beauty standards (37). Meta’s decision to remove content fact checkers in the US increases the chance of CAs viewing false BI related content. Considering SM content may be edited, photoshopped (35), or AI-generated, regularly engaging with images on SM can create body dissatisfaction. Body dissatisfaction is a risk factor for developing unhealthy eating habits (37). A 2023 study found that regular image-based

SM exposure was associated with body dysmorphia, anxiety and depression in a cohort aged sixteen to eighteen (39).

Conversely, engaging with body positivity content on SM has benefited young people in appreciating their body type (40). CAs who struggle with eating may find inspiration from content that promotes healthy lifestyles, meal planning and exercise. The literature recommends that clinicians inquire from patients about the type of SM content consumed to better gauge triggers for those with EPs (41). Several studies recommend that users spend less than two hours daily on SM and participate in media literacy programs to avoid EP triggers and problematic SM use (30, 37, 41). In order to meet the NHS's ED goals, it is integral that clinicians and families continue to actively engage in discussions with SM policymakers who have the power to control unsafe content.

8. Case Study:

This case study presents an anecdotal experience from a real-life patient. The patient, X, has her details completely anonymised for this case study—X and her family consent to share their story. X's story describes SM as a double-edged sword, yielding several benefits and risks for CAMH. The case study further demonstrates guardians' challenges in managing SM use.

X comes out as a transgender female to her parents at the age of eight. While her parents are accepting, she faces severe bullying at school, leading to heightened anxiety. She experiences her first panic attack, prompting X to be homeschooled. During her homeschooling, X utilises SM platforms like YouTube, Google Classroom, and even Instagram to learn. X initially finds these learning resources helpful as they cater to her visual learning style. While X feels less anxious learning online, she also experiences loneliness because she lacks in-person connections.

X's parents notice her feelings of loneliness and think it might be beneficial for her to find a transgender youth group to help her feel part of a community. Unfortunately, in their rural area, there are no in-person transgender youth groups available. Determined to find support, X's family discovers a SM

platform designed for transgender children aged eight to thirteen. The SM forum provides X with her first opportunity to connect with other transgender children, which eases her feelings of isolation.

While X's parents are happy that she makes friends online, engaging her during homeschooling is challenging. She frequently waits for text messages and quickly distracts herself from lessons whenever she receives a response from a friend. Her parents try to limit SM while she learns, but this leads to extreme behavioural challenges, including physical outbursts like punching and kicking her parents. They also notice that X has difficulty falling asleep when her SM usage extends to bedtime. They introduce SM as a reward for completing chores or demonstrating positive behaviour. X is eager to earn "SM minutes" instead of a traditional monetary allowance, sometimes accumulating up to five hours of SM time.

Unfortunately, X becomes a target of cyberbullying, with peers in the transgender SM forum mocking her appearance. Although the platform's administrators eventually remove the perpetrators, the damage is already done. X feels rejected and decides not to return to the group. The aftermath of cyberbullying leads to increased aggression, anxiety, and suicidal ideation. X's parents attempt to return her to in-person schooling, but she reacts violently towards her peers and is subsequently suspended. X's family feel lost, recognising that while SM helps with some of X's social issues, it also creates new problems with her sleep, aggression, bullying, and loneliness.

Discussion:

X's story reflects the experiences of many CAs on SM, including the benefits of SM, its role in education, cyberbullying and sleep disturbances. Her case highlights families' difficulties while trying to enable safe SM use. Recognised in various literatures, X is particularly vulnerable to the adverse effects of SM as a transgender girl with pre-existing mental health challenges and past bullying experiences.

From her parents' perspective, it proves incredibly challenging to improve X's mental health and wellbeing, given her social anxiety and the lack of in-person community groups in their area. X's case also underscores the inequalities in health services for CAs in rural areas, where in-person support groups are unavailable. Improving social services and access to community groups can foster real-life interactions for CAs, thereby limiting their dependence on SM.

Additionally, this case highlights the importance of clinicians guiding parents with SM usage rules. While X's parents' introduction of SM as a reward system is well-intentioned, it is not an intervention supported by literature. Rewarding SM time can increase digital device usage, especially if rules are applied inconsistently (34). Keeping SM use within the recommended two hours may help limit X's problematic usage. Moreover, educating the family about sleep hygiene could alleviate her aggression and anxiety. Access to leisure SM apps should be controlled in sleeping and learning environments to avoid distractions. The removal of content fact checkers may also lead to miseducation on SM. It is important that educators use credible SM sources for teaching.

Considerations for policymakers and SM developers also stem from this case, highlighting the need for improved detection of inappropriate behaviours within SM forums. By the time the forum's administrators removed the bullies, significant harm had already occurred, preventing X from experiencing the social connections most CAs seek. The bullies particularly targeted X's appearance, which puts her at risk of body dissatisfaction and EPs. Providing support resources for children who have faced cyberbullying should be a priority on online platforms. It is evident that while CAs are "digital natives" they are still figuring out how to use SM safely. Guardians also require guidance from educators, clinicians and policymakers to gauge a better understanding of promoting safe SM use.

9. Suggestions and Conclusion:

All in all, SM is a double-edged sword because of the many risks and benefits it poses to CAMH, families, educators, and policymakers. SM has reached its popularity because of its efficient communication and community building. Furthermore, integrating SM into education equips young people with essential technical skills for future careers. Parents and clinicians increasingly rely on SM for meaningful communication.

While SM is here to stay, constant engagement in SM exacerbates risks like cyberbullying, exposure to explicit content, sleep disturbances, eating disorders, loneliness, and emotional dysregulation. CAMH referrals continue to rise despite current psychiatric interventions and mental health support

services available on SM. Educators also struggle to keep up with the demands of parents concerned about worsening CAMH. Furthermore, deficient CAMH leads to severe economic losses and disadvantages in the workforce, making it an incentive for policymakers to improve CAMHS.

Preventative interventions are integral, where clinicians, educators and policymakers create community awareness on the risks of SM and the benefits when used carefully. CAs and guardians must be educated on sleep hygiene, false or edited content, cyberbullying, and addictive patterns. Implementing digital literacy within curricula helps CAs identify and report harmful activity online. Clinicians should be involved in developing media curricula to maximize the benefits of SM on mental health. It is equally important to educate guardians (30) so they can role model safe SM use and good sleep hygiene practices. Families should be cautious about using SM time as a reward, as inconsistent rules or loopholes may undermine this strategy and potentially increase dependence on digital devices (34).

When educators and guardians converse about SM with young people, they must engage with openness and lack of judgment. Research indicates that adolescents are more likely to adhere to therapeutic advice when a sense of safety and autonomy in decision-making is fostered (33). Schools have attempted to implement various rules regarding SM usage, with mixed outcomes. Some students express feelings of lost autonomy (33). By negotiating with students and fostering open discussions, schools can create rules for SM use that are more acceptable to everyone involved (33).

CAs motivated to limit their SM use can benefit from SM-time tracking and exploring hobbies to build in-person communities. There is a need for more social support groups in rural communities. For those struggling with addictive SM habits, Cognitive Behavioral Therapy (CBT) or FBT presents as a practical management approach. CAs and/or family members can learn to identify bad habits, recognize triggers, and build better group dynamics (33). Moreover, the literature recommends motivational interviewing (30, 40) to delve deeper into the factors that drive and deter CAs from SM.

Finally, clinicians and policymakers should collaborate in developing SM forums that more effectively identify safety risks and harmful content. All stakeholders must push SM developers to moderate user-profiles and problematic activity better. With the very recent removal of content

fact-checkers on US Meta SM platforms, it is especially important that stakeholders advocate for the safety of CAs viewing potentially false content online. Further research must be conducted in the US regarding CAs experiences on SM with the absence of content fact checkers. SM forums are profit-driven; so, clinician led advocacy on safe SM use is necessary for the betterment of CAMH.

Ultimately, by adopting a multifaceted approach that integrates education, therapy, advocacy, and collaboration, all stakeholders can play a pivotal role in mitigating the negative impacts of SM. SM is a constantly evolving tool; this means that stakeholders have the power to continue improving SM's safety and social features to benefit CAMH. Improving CAMH strengthens the economy, healthcare services, and education systems. Finally, continuous research into safe SM use is necessary to ensure that stakeholders make evidence-based decisions for the betterment of CAMH.

References

1. Nesi J. The Impact of Social Media on Youth Mental Health: Challenges and Opportunities. North Carolina Medical Journal [Internet]. 2020 Mar 1;81(2):116–21. Available from: https://ncmedicaljournal.com/article/55247
2. Dingli A, Seychell D. Who Are the Digital Natives? The New Digital Natives. 2015;9–22.
3. Statista. Topic: Social media and children in the UK [Internet]. Statista. 2022. Available from: https://www.statista.com/topics/9445/social-media-and-children-in-the-uk/
4. Abi-Jaoude E, Naylor KT, Pignatiello A. Smartphones, Social Media Use and Youth Mental Health. Canadian Medical Association Journal [Internet]. 2020 Feb 10;192(6). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7012622/
5. Boniel-Nissim M, Marino C, Galeotti T, Blinka L, Ozoliņa K, Craig W, et al. A focus on adolescent social media use and gaming in Europe, Central Asia and Canada: Health Behaviour in School-aged Children international report from the 2021/2022 survey. Whoint [Internet]. 2024 Sep 25;6. Available from: https://iris.who.int/handle/10665/378982
6. Young Minds. 53% Rise in Yearly Referrals to CAMHS [Internet]. YoungMinds. 2023. Available from: https://www.youngminds.org.uk/about-us/media-centre/press-releases/yearly-referrals-to-young-people-s-mental-health-services-have-risen-by-53-since-2019/
7. Anderson M, Jiang J. Teens' Social Media Habits and Experiences [Internet]. Pew Research Center. 2018. Available from: https://www.pewresearch.org/internet/2018/11/28/teens-social-media-habits-and-experiences/
8. Reilly M, Dogra N, Hughes J, Reilly P, George R, Whiteman N. Potential of social media in promoting mental health in adolescents. Health Promotion International [Internet]. 2019 Jul 30;34(5):981–91. Available from: https://academic.oup.com/heapro/article-abstract/34/5/981/5061526

9. CQC. Brief guide: waiting times for community child and adolescent mental health services Context and policy [Internet]. 2020. Available from: https://www.cqc.org.uk/sites/default/files/Brief_guide_Waiting_times_for_community_child_and_adolescent_mental_health_services.pdf
10. Bozzola E. The Use of Social Media in Children and Adolescents: Scoping Review on the Potential Risks. International Journal of Environmental Research and Public Health [Internet]. 2022 Aug 12;19(16):1–33. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9407706/
11. Livingstone S, Mascheroni G, Stoilova M. The outcomes of gaining digital skills for young people's lives and wellbeing: A systematic evidence review. New Media & Society [Internet]. 2021 Sep 13;25(5):146144482110431. Available from: https://journals.sagepub.com/doi/full/10.1177/14614448211043189
12. Van Schalkwyk G. Artificial intelligence in pediatric behavioral health. Child and Adolescent Psychiatry and Mental Health. 2023 Mar 12;17(1).
13. Crone EA, Konijn EA. Media Use and Brain Development during Adolescence. Nature Communications [Internet]. 2018 Feb 21;9(1). Available from: https://www.nature.com/articles/s41467-018-03126-x
14. Vaillancourt T, Faris R, Mishna F. Cyberbullying in Children and Youth: Implications for Health and Clinical Practice. The Canadian Journal of Psychiatry [Internet]. 2016 Dec 19;62(6):368–73. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5455867/
15. Nixon C. Current perspectives: The impact of cyberbullying on adolescent health. Adolescent Health, Medicine and Therapeutics [Internet]. 2014 Aug 1;5(5):143–58. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4126576/
16. Vassiliadis L. Educators' Perspectives on Cyberbullying: A Qualitative Study. United States -- California: Alliant International University. 2024.

17. Ybarra ML, Mitchell KJ, Wolak J, Finkelhor D. Examining Characteristics and Associated Distress Related to Internet Harassment: Findings From the Second Youth Internet Safety Survey. PEDIATRICS. 2006 Oct 1;118(4):e1169–77.
18. Guo X. Research on the Influence of Media Violence on Youth [Internet]. www.atlantis-press.com. Atlantis Press; 2022. p. 1170–3. Available from: https://www.atlantis-press.com/proceedings/sdmc-21/125968642
19. Daine K, Hawton K, Singaravelu V, Stewart A, Simkin S, Montgomery P. The Power of the Web: A Systematic Review of Studies of the Influence of the Internet on Self-Harm and Suicide in Young People. García AV, editor. PLoS ONE. 2013 Oct 30;8(10):e77555.
20. Radovic A, Gmelin T, Stein BD, Miller E. Depressed adolescents' positive and negative use of social media. Journal of Adolescence. 2017;55(55):5–15.
21. Department for Science, Innovation & Technology. Sharing nudes and semi-nudes: advice for education settings working with children and young people (updated March 2024) [Internet]. GOV.UK. 2020 [cited 2025 Jan 4]. Available from: https://www.gov.uk/government/publications/sharing-nudes-and-semi-nudes-advice-for-education-settings-working-with-children-and-young-people/sharing-nudes-and-semi-nudes-advice-for-education-settings-working-with-children-and-young-people
22. Maza MT, Fox KA, Kwon SJ, Flannery JE, Lindquist KA, Prinstein MJ, et al. Association of Habitual Checking Behaviors on Social Media With Longitudinal Functional Brain Development. JAMA Pediatrics [Internet]. 2023 Jan 3;177(2):160–7. Available from: https://jamanetwork.com/journals/jamapediatrics/article-abstract/2799812
23. Sherman LE, Greenfield PM, Hernandez LM, Dapretto M. Peer Influence Via Instagram: Effects on Brain and Behavior in Adolescence and Young Adulthood. Child Development [Internet]. 2017 Jun 14;89(1):37–47. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5730501/

24. Duncan MJ, Riazi NA, Faulkner G, Gilchrist JD, Leatherdale ST, Patte KA. The association of physical activity, sleep, and screen time with mental health in Canadian adolescents during the COVID-19 pandemic: A longitudinal isotemporal substitution analysis. Mental Health and Physical Activity. 2022 Sep;23:100473.
25. Pirdehghan A, Khezmeh E, Panahi S. Social Media Use and Sleep Disturbance among adolescents: a cross-sectional Study. Iranian Journal of Psychiatry. 2021 Mar 17;16(2):137–45.
26. Brodersen K, Hammami N, Katapally TR. Smartphone Use and Mental Health among Youth: It Is Time to Develop Smartphone-Specific Screen Time Guidelines. Youth. 2022 Feb 7;2(1):23–38.
27. Marciano L, Ostroumova M, Schulz Peter J, Camerini AL. Digital Media Use and Adolescents' Mental Health during the Covid-19 Pandemic: a Systematic Review and Meta-Analysis. Frontiers in Public Health [Internet]. 2022 Feb 1;9(793868). Available from: https://www.frontiersin.org/articles/10.3389/fpubh.2021.793868/full
28. Malone SK. Early to Bed, Early to Rise? The Journal of School Nursing. 2011 May 23;27(5):348–54.
29. Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, DonCarlos L, et al. National Sleep Foundation's updated sleep duration recommendations: final report. Sleep Health. 2015 Dec;1(4):233–43.
30. Social Media and Mental Health Addictions and Problematic Internet Use [Internet]. Available from: https://ontario.cmha.ca/wp-content/uploads/2017/05/Addictions-and-Problematic-Internet-Use-CMHA-Ontario-Final.pdf
31. Social Media Addiction and Young People: A Systematic Review of Literature [Internet]. ResearchGate. Available from: https://www.researchgate.net/publication/343523958_SOCIAL_MEDIA_ADDICTION_AND_YOUNG_PEOPLE_A_SYSTEMATIC_REVIEW_OF_LITERATURE

32. Kuss D, Griffiths M. Social Networking Sites and Addiction: Ten Lessons Learned. International Journal of Environmental Research and Public Health [Internet]. 2017 Mar 17;14(3):311. Available from: https://www.mdpi.com/1660-4601/14/3/311?_kx=

33. Amirthalingam J, Khera A. Understanding Social Media Addiction: A Deep Dive. Cureus. 2024 Oct 27.

34. Controlling children's behavior with screen time leads to more screen time, study reveals [Internet]. ScienceDaily. 2019. Available from: https://www.sciencedaily.com/releases/2019/01/190109114811.htm

35. Harriger JA, Evans JA, Thompson JK, Tylka TL. The Dangers of the Rabbit hole: Reflections on Social Media as a Portal into a Distorted World of Edited Bodies and Eating Disorder Risk and the Role of Algorithms. Body Image [Internet]. 2022. Available from: https://www.sciencedirect.com/science/article/pii/S1740144522000638

36. NHS. Part 5: Eating problems and disorders [Internet]. NHS Digital. 2023. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2023-wave-4-follow-up/part-5-eating-problems-and-disorders

37. Pedalino F, Camerini AL. Instagram Use and Body Dissatisfaction: The Mediating Role of Upward Social Comparison with Peers and Influencers among Young Females. International Journal of Environmental Research and Public Health [Internet]. 2022;19(3):1543. Available from: https://www.mdpi.com/1660-4601/19/3/1543

38. Zosia Kmietowicz. Eating disorders: Targets fail to improve children's access to treatment, warn psychiatrists. The BMJ. 2024 Feb 28;q523–3.

39. Gupta M, Jassi A, Krebs G. The Association between Social Media Use and Body Dysmorphic Symptoms in Young People. Frontiers in Psychology [Internet]. 2023 Aug 17;14(1). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10471190/

40. Link Between Social Media & Body Image [Internet]. King University Online. Available from: https://online.king.edu/news/social-media-and-body-image

41. Morris AM, Katzman DK. The impact of the media on eating disorders in children and adolescents. Paediatrics & Child Health [Internet]. 2003 May 1;8(5):287–9. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2792687/

42. CLS | Counting the true cost of childhood psychological problems in adult life [Internet]. Available from: https://cls.ucl.ac.uk/counting-the-true-cost-of-childhood-psychological-problems-in-adult-life/

43. Part 3: Education, services and support [Internet]. NHS England Digital. 2023. Available from: https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2023-wave-4-follow-up/part-3-education-services-and-support

44. Fadus MC, Squeglia LM, Valadez EA, Tomko RL, Bryant BE, Gray KM. Adolescent Substance Use Disorder Treatment: An Update on Evidence-Based Strategies. Current psychiatry reports [Internet]. 2019 Sep 14;21(10):96. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7241222/

45. Higson-Sweeney N, Loades ME, Hiller R, Read R. Addressing sleep problems and fatigue within child and adolescent mental health services: A qualitative study. Clinical Child Psychology and Psychiatry. 2019 Apr 8;25(1):200–12.

46. McCrory S, Crawford M, Ross C, Mohanty D, Mistry D, Chadwick K, et al. P39 Adapting a sleep intervention for adolescents with co-morbid mental health problems and insomnia: a Delphi study. Abstracts. 2023 Oct 1;

47. Scott H, Biello SM, Woods HC. Social media use and adolescent sleep patterns: cross-sectional findings from the UK millennium cohort study. BMJ Open. 2019 Aug;9(9):1–9.

48. More Speech and Fewer Mistakes [Internet]. Meta. 2025 [cited 2025 Jan 15]. Available from: https://about.fb.com/news/2025/01/meta-more-speech-fewer-mistakes/