

Chapter 4

Appendix

Appendix 4A: Further information about included reports

Table 4A.1: Conclusions and key policy positions

Report	Conclusions	Policy Positions
APA	<p>"Using social media is not inherently beneficial or harmful to young people. Adolescents' lives online both reflect and impact their offline lives. In most cases, the effects of social media are dependent on adolescents' own personal and psychological characteristics and social circumstances—intersecting with the specific content, features, or functions that are afforded within many social media platforms. In other words, the effects of social media likely depend on what teens can do and see online, teens' pre-existing strengths or vulnerabilities, and the contexts in which they grow up."</p>	<p>Age restrictions: "Focusing only on age restrictions does not improve the platforms or address the biological and psychological vulnerabilities that persist past age 18... fail to mitigate the harms for those above the age limit... may disadvantage those who are experiencing psychological benefits"</p> <p>Parental controls: "will not address risks embedded within platforms themselves... ignores the complexities of adolescent development, the importance of childhood autonomy and privacy, and disparities in time or resources available for monitoring across communities."</p> <p>Platform responsibility: "Policies will not protect youth unless technology companies are required to reduce the risks embedded within the platforms themselves."</p> <p>"Specific features (e.g., the 'like' button, recommended content, unrestricted time limits, endless scrolling)... should be tailored to the social and cognitive abilities and comprehension of adolescent users."</p>
NASEM	<p>"The science suggests that some features of social media function can harm some young people's mental health. These include, but are not limited to, algorithmically driven distortions of reality exacerbating harmful content and disinformation, the distraction away from time that can otherwise be used in more healthy ways, and the creation of opportunities where youth can be abused or exploited.</p> <p>However, there are also several ways in which social media improve the lives of youth, including the creation of opportunities for community among more marginalized youth, and the opportunity for fun and joy for the vast majority of users. This balance lies at the heart of the relation between social media and mental health. While some users, using social media in particular ways, may have their mental health adversely affected, for many others there will be no such harm, and for others still the experience will be helpful. This suggested to the committee a judicious approach to protect youth mental health is warranted rather than some of the more broad-stroke bans that have been proposed by other entities in recent years."</p>	<p>The committee's recommendations include recommendations to develop industry standards that can ensure social media use protects mental health in the long term, the engagement of educators and health care providers in highlighting the benefits, and minimising the harms of social media use, and specific measures to protect youth from online abuse. The committee also recommends a doubling down on research that can lead to better clarity about the causal links between aspects of social media and mental health, to the end of pointing to more specific actions that can mitigate the harms, and accentuate the positives, of social media.</p> <p>Age restrictions: "Creating a bright line age limit ignores individual differences in adolescents' maturity and competency... neurological changes continue until age 25"</p> <p>Parental controls: "Granting parents and caregivers greater access to their children's social media accounts will not address risks embedded within platforms themselves."</p> <p>Platform responsibility: "Policies will not protect youth unless technology companies are required to reduce the risks embedded within the platforms themselves."</p> <p>"It is critical that AI-recommended content be designed to prioritize youth safety and welfare over engagement."</p>
OSG	<p>"At this time, we do not yet have enough evidence to determine if social media is sufficiently safe for children and adolescents."</p> <p>"Our children have become unknowing participants in a decades-long experiment."</p> <p>Invokes safety-first approach: "In the case of toys, transportation, and medications... a basic threshold for safety must be met, and until safety is demonstrated with rigorous evidence and independent evaluation, protections are put in place to minimize the risk of harm"</p>	<p>Age restrictions: "Pursue policies that further limit access—in ways that minimize the risk of harm—to social media for all children, including strengthening and enforcing age minimums."</p> <p>Parental controls: "To date, the burden of protecting youth has fallen predominantly on children, adolescents, and their families... the entire burden of mitigating the risk of harm of social media cannot be placed on the shoulders of children and parents."</p> <p>Platform responsibility: "Technology companies play a central role and have a fundamental responsibility in designing safe online environments"</p> <p>"Social media platforms are often designed to maximize user engagement... Push notifications, autoplay, infinite scroll, quantifying and displaying popularity (i.e., 'likes'), and algorithms... are some examples of these features that maximize engagement."</p> <p>"Platform design should "prioritize health and safety as the first principle... avoid design features that attempt to maximize time, attention, and engagement.""</p>

Table 4A.2: Stated aims and development process

Organisation	Title	Date	Pgs	Stated aims	Development process	Committee structure	Funding sources
APA	Health advisory on social media use in adolescents	May-23	11	<p>Provide science-informed recommendations based on psychological research</p> <p>Offer guidance to stakeholders who share responsibility for adolescents' wellbeing</p>	<p>Presidential advisory panel formed by APA President Thema Bryant to examine relevant scientific literature and formulate recommendations based on psychological science and research from related disciplines</p>	<p>Co-Chairs: Mary Ann McCabe, PhD and Mitch Prinstein, PhD</p> <p>Committee members: 11 advisory members</p>	<p>Internal APA funding from membership dues, publication sales, and licensing fees; no external funding sources declared</p>
	Potential risks of content, features, and functions	Apr-24	6	<p>Elaborate on psychological science findings relevant to policy solutions</p> <p>Inform development of social media safety standards</p> <p>Highlight the need for social media companies to make fundamental changes</p>	<p>Follow-up report by same core team to elaborate on psychological science findings relevant to policy solutions and platform safety standards</p>	<p>Same core team as 2023 advisory: McCabe, Prinstein, and colleagues</p>	
NASEM	Social media and adolescent health	Dec-24	287	<p>Comprehensively examine current research and make conclusions about social media's impact</p> <p>Systematically answer four key research questions about health effects and design impacts</p> <p>Provide actionable recommendations for parents, companies, and public officials</p>	<p>Standard NASEM consensus study process with ad hoc expert committee conducting systematic literature review and deliberation over approximately one year, subjected to rigorous independent peer-review</p>	<p>Committee Chair: Sandro Galea, Dean of Boston University School of Public Health</p> <p>Editors: Sandro Galea, Gillian J. Buckley, and Alexis Wojtowicz</p> <p>11 committee members, 7 study staff, and 12 independent reviewers</p>	<p>Democracy Fund, Ford Foundation, John D. and Catherine T. MacArthur Foundation, Luminate Projects Limited, National Academy of Sciences W.K. Kellogg Foundation Fund, Open Society Foundations, and William and Flora Hewlett Foundation</p>
OSG	Social media and youth mental health	May-23	25	<p>Call attention to growing concerns about social media effects on youth mental health</p> <p>Provide actionable recommendations for multiple stakeholders</p> <p>Address an urgent public health issue requiring immediate action</p> <p>Create safer, healthier digital environments for children and adolescents</p>	<p>Substantial review of available evidence conducted through standard federal health advisory processes within the Office of the Surgeon General</p>	<p>Primary author: US Surgeon General Dr. Vivek Murthy; developed within HHS Office of the Surgeon General</p>	<p>Federal taxpayer appropriations through congressional budget process for HHS operations</p>

Appendix 4B: Detailed methodological approach for evidence mapping

Classification framework: Our systematic mapping classified articles along multiple dimensions adapted from Richards et al. (2025),¹ focusing on characteristics relevant to evaluating evidence quality and potential selection bias.

Study methodology: We categorised articles by research design, distinguishing between:

- Experimental studies (randomised controlled trials, quasi-experimental designs, laboratory experiments)
- Observational studies (cross-sectional surveys, longitudinal cohort studies, case-control designs)
- Review types (systematic reviews, meta-analyses, narrative reviews, scoping reviews)
- Mixed methods approaches
- Qualitative and ethnographic studies

Causality assessment: Given the centrality of causal claims in policy debates about social media effects, we coded whether each study's methodology could plausibly support causal inferences (but not whether each article actually claims to make causal inferences). Studies employing experimental manipulation, intensive longitudinal designs with appropriate lag structures, or quasi-experimental approaches with credible identification strategies were coded as “plausible” for causality. Correlational cross-sectional designs, narrative reviews without systematic causal evaluation, and descriptive studies were coded as “not supported by method.”

Sample characteristics: We recorded population focus (adolescent-specific, adult samples, mixed age groups, or unspecified), enabling assessment of whether cited research matched the policy population of interest.

Thematic focus: We classified articles by:

- **Health outcomes studied:** Depression, anxiety, wellbeing, body dissatisfaction, eating disorders, sleep outcomes, self-harm/suicidal ideation, general mental health, physical health, or unspecified outcomes.
- **Social media platforms examined:** General social media/screen time, specific platforms (Facebook, Instagram, TikTok, Twitter/X, YouTube), or a combination of platforms.
- **Primary topic relevance:** To focus on directly relevant evidence, we included only articles whose primary research question concerned social media and adolescent mental health relationships. We excluded articles primarily focused on related topics (bullying, sleep independent of social media, or non-media-related neurological development) unless social media-mental health relationships represented a core component of the investigation.

Reported findings: Where available and clearly stated in abstracts, we coded the direction of reported effects (positive, negative, null, mixed) and magnitude descriptors. However, substantial proportions of abstracts did not provide sufficient detail for reliable coding, resulting in many “inconclusive” classifications for this dimension.

AI-assisted classification with validation protocol

Given the large number of citations ($n = 355$ unique articles), manual coding by multiple human coders was not feasible within project constraints. We therefore employed an AI-assisted classification approach with rigorous validation protocols.

Classification system: We used ChatGPT-4o-mini via OpenAI API to process article abstracts using structured prompts that specified classification categories, definitions, and decision rules. Following emerging best practices for AI use in academic research,² our prompt was designed to minimise interpretation errors and hallucination risks.

Key methodological safeguards:

- 1. Explicit uncertainty acknowledgement and explanation:** The system was instructed to respond with “inconclusive” when information was unclear, ambiguous, or required inference beyond what was explicitly stated in the abstract. This constrained the system from generating plausible-sounding but potentially inaccurate classifications. Forcing the system to also provide reasoning for its classification choices enabled us to manually verify the choices made if necessary.
- 2. Structured output format:** Responses were constrained to predefined category options rather than free-form text, reducing variability and improving reliability.
- 3. Iterative prompt refinement:** Initial pilot testing with five citations identified ambiguities in category definitions and prompt wording, which were refined before formal validation.

Validation protocol: Following pilot refinement, we conducted formal reliability testing on 25 randomly selected citations coded both manually (by SLH) and via AI. We proceeded with full analysis only after achieving >90% agreement across all classification categories. Disagreements during validation informed additional prompt refinements to improve alignment between AI and human classification logic.

Handling inconclusive classifications: Due to resource constraints, articles classified as “inconclusive” for any dimension remained coded as such rather than conducting full-text reviews. This decision was made to prioritise transparency about classification confidence over forcing determinations where information was insufficient. The prevalence of “inconclusive” outcomes (particularly for reported findings and effect direction) represents a limitation affecting statistical analysis precision, though it does not compromise the validity of classifications that could be made with confidence from abstract information alone. Based on the poor performance for reported finding classification, we chose not to proceed with further statistical analysis.

Transparency and reproducibility: Complete documentation of AI prompts, classification instructions, raw citation data, and raw classification data are available upon request.

Statistical testing and corrections

Primary analyses: We used chi-square tests of independence to compare categorical distributions (study methodology, thematic characteristics, health outcomes studied, platforms examined) across the three organisations. Effect sizes were calculated using Cramér’s V , interpreted using conventional standards (small: 0.1, medium: 0.3, large: 0.5).

We note that standard assumptions of independence are imperfectly met here: organisations drew from overlapping literature, later reports may have been influenced by earlier ones, and citations within each report were strategically curated rather than independently sampled. We therefore present inferential statistics primarily as heuristics for identifying notable distributional differences, with effect sizes reported to contextualise practical significance. Our goal is descriptive comparison of these three documents rather than generalisation to a broader population of evidence syntheses.

Multiple testing correction: Given that we conducted numerous simultaneous statistical comparisons (testing differences across many variables), we faced an increased risk of Type I errors (false positives). To address this, we applied the Benjamini-Hochberg false discovery rate (FDR) correction at $\alpha = 0.05$. This procedure controls the expected proportion of false discoveries among rejected null hypotheses while maintaining greater statistical power than more conservative corrections like Bonferroni.

Sample size sensitivity analyses: The three reports showed substantial differences in citation volume (APA: 84, NASEM: 876, OSG: 103). This imbalance creates two concerns: (1) statistical power differs across organisations, potentially detecting trivial differences in large samples while missing meaningful differences in small

samples, and (2) proportional comparisons may be misleading when based on very different absolute numbers.

To assess whether observed patterns were robust to these sample size imbalances, we conducted sensitivity analyses proportionally down-sampling NASEM citations to create balanced comparison sets. We randomly selected sub-samples from NASEM matching APA and OSG sample sizes, recalculated chi-square tests and effect sizes, and repeated this process multiple times to assess the stability of conclusions. Results indicated that primary findings (no significant organisational differences in evidence characteristics) were robust to sample size considerations.

Reporting conventions: Throughout the results, we report both raw p-values and FDR-corrected p-values. Statistical significance was assessed at conventional $\alpha = 0.05$ threshold. Effect sizes (Cramér's V) are reported alongside significance tests to distinguish statistical significance from practical importance.

Appendix 4C: Citation overlap

Table 4C.1: Citation overlap

Title	Authors	Year	Sources	Full reference
Interplay between social media use, sleep quality, and mental health in youth: A systematic review	Alonzo, R.; Hussain, J.; Stranges, S.; Anderson, K.K.	2021	APA; NAS; OSG	Alonzo, R., Hussain, J., Stranges, S., & Anderson, K. K. (2021). Interplay between social media use, sleep quality, and mental health in youth: A systematic review. <i>Sleep Medicine Reviews</i> , 56, 101414. https://doi.org/10.1016/j.smr.2020.101414
Windows of developmental sensitivity to social media	Orben, A.; Przybylski, A.K.; Blakemore, S.-J.; Kievit, R.A.	2022	APA; NAS; OSG	Orben, A., Przybylski, A. K., Blakemore, S. J., & Kievit, R. A. (2022). Windows of developmental sensitivity to social media. <i>Nature Communications</i> , 13(1), 1649. https://doi.org/10.1038/s41467-022-29296-3
Association of habitual checking behaviors on social media with longitudinal functional brain development	Maza, M.T.; Fox, K.A.; Kwon, S.J.; Flannery, J.E.; Lindquist, K.A.; Prinstein, M.J.; Telzer, E.H	2023	APA; NAS; OSG	Maza, M. T., Fox, K. A., Kwon, S. J., Flannery, J. E., Lindquist, K. A., Prinstein, M. J., & Telzer, E. H. (2023). Association of habitual checking behaviors on social media with longitudinal functional brain development. <i>JAMA Pediatrics</i> , 177(2), 160–167. https://doi.org/10.1001/jamapediatrics.2022.4924
Using social media for social comparison and feedback seeking: Gender and popularity moderate associations with depressive symptoms	Nesi, J.; Prinstein, M.J.	2015	APA; NAS; OSG	Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: Gender and popularity moderate associations with depressive symptoms. <i>Journal of Abnormal Child Psychology</i> , 43(8), 1427–1438. https://doi.org/10.1007/s10802-015-0020-0
Social media use and health and well-being of lesbian, gay, bisexual, transgender, and queer youth: Systematic review	Berger, M.N.; Taba, M.; Marino, J.L.; Lim, M.S.C.; Skinner, S.R.	2022	NAS; OSG	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. <i>Journal of Medical Internet Research</i> , 24(9), e38449. https://doi.org/10.2196/38449
Problematic social media use in adolescents and young adults: Systematic review and meta-analysis	Shannon, H.; Bush, K.; Villeneuve, P. J.; Hellemans, K. G.; Guimond, S.	2022	NAS; OSG	Shannon, H., Bush, K., Villeneuve, P. J., Hellemans, K. G., & Guimond, S. (2022). Problematic social media use in adolescents and young adults: Systematic review and meta-analysis. <i>JMIR Mental Health</i> , 9(4), e33450.
Annual research review: Adolescent mental health in the digital age: Facts, fears, and future directions	Oggers, C. L.; Jensen, M. R.	2020	NAS; OSG	Oggers, C. L., & Jensen, M. R. (2020). Annual Research Review: Adolescent mental health in the digital age: Facts, fears, and future directions. <i>Journal of Child Psychology and Psychiatry, and Allied Disciplines</i> , 61(3), 336–348. https://doi.org/10.1111/jcpp.13190
Association of online risk factors with subsequent youth suicide-related behaviors in the US	Sumner, S.A.; Ferguson, B.; Bason, B.; Dink, J.; Yard, E.; Hertz, M.; Hilkert, B.; Holland, K.; Mercado-Crespo, M.; Tang, S.; Jones, C.M.	2021	NAS; OSG	Sumner, S. A., Ferguson, B., Bason, B., Dink, J., Yard, E., Hertz, M., Hilkert, B., Holland, K., Mercado-Crespo, M., Tang, S., & Jones, C. M. (2021). Association of online risk factors with subsequent youth suicide-related behaviors in the US. <i>JAMA Network Open</i> , 4(9), e2125860. https://doi.org/10.1001/jamanetworkopen.2021.25860
Benefits and costs of social media in adolescence	Uhls, Y. T.; Ellison, N. B.; Subrahmanyam, K.	2017	NAS; OSG	Uhls, Y. T., Ellison, N. B., & Subrahmanyam, K. (2017). Benefits and costs of social media in adolescence. <i>Pediatrics</i> , 140(Suppl 2), S67–S70. https://doi.org/10.1542/peds.2016-1758E
Media use and brain development during adolescence	Crone, E. A.; Konijn, E. A.	2018	NAS; OSG	Crone, E. A., & Konijn, E. A. (2018). Media use and brain development during adolescence. <i>Nature Communications</i> , 9(1), 588. https://doi.org/10.1038/s41467-018-03126-x
Online social networking and addiction—a review of the psychological literature	Kuss, D.J.; Griffiths, M.D.	2011	NAS; OSG	Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. <i>International Journal of Environmental Research and Public Health</i> , 8(9), 3528–3552. https://doi.org/10.3390/ijerph8093528
Prevalence of online sexual offenses against children in the US	Finkelhor, D.; Turner, H.; Colburn, D.	2022	NAS; OSG	Finkelhor, D., Turner, H., & Colburn, D. (2022). Prevalence of online sexual offenses against children in the US. <i>JAMA Network Open</i> , 5(10), e2234471. https://doi.org/10.1001/jamanetworkopen.2022.34471
Social comparison, social media, and self-esteem	Vogel, E. A.; Rose, J. P.; Roberts, L. R.; Eckles, K.	2014	NAS; OSG	Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. <i>Psychology of Popular Media Culture</i> , 3(4), 206–222. https://doi.org/10.1037/ppm000047

Table 4C.1: Citation overlap

Title	Authors	Year	Sources	Full reference
Social media and mental health	Braghieri, L.; Levy, R.; Makarin, A.	2022	NAS; OSG	Braghieri, L., Levy, R., & Makarin, A. (2022). Social media and mental health. <i>American Economic Review</i> , 112(11), 3660–3693. https://pubs.aeaweb.org/doi/abs/10.1257/aer.20211218
The associations between problematic Facebook use, psychological distress and well-being among adolescents and young adults: A systematic review and meta-analysis	Marino, C.; Gini, G.; Vieno, A.; Spada, M. M.	2018	NAS; OSG	Braghieri, L., Levy, R., & Makarin, A. (2022). Social media and mental health. <i>American Economic Review</i> , 112(11), 3660–3693. https://pubs.aeaweb.org/doi/abs/10.1257/aer.20211218
The effect of social media on well-being differs from adolescent to adolescent	Beyens, I.; Pouwels, J. L.; van Driel, I. I.; Keijsers, L.; Valkenburg, P. M.	2020	NAS; OSG	Beyens, I., Pouwels, J. L., van Driel, I. I., Keijsers, L., & Valkenburg, P. M. (2020). The effect of social media on well-being differs from adolescent to adolescent. <i>Scientific Reports</i> , 10(1).
Sleep variability in adolescence is associated with altered brain development	Telzer, E.H.; Goldenberg, D.; Fuligni, A.J.; Lieberman, M.D.; Gálvan, A.	2015	APA; OSG	Beyens, I., Pouwels, J. L., van Driel, I. I., Keijsers, L., & Valkenburg, P. M. (2020). The effect of social media on well-being differs from adolescent to adolescent. <i>Scientific Reports</i> , 10(1).
Adolescent risk taking, impulsivity, and brain development: implications for prevention	Romer, D.	2010	APA; OSG	Romer, D. (2010). Adolescent risk taking, impulsivity, and brain development: Implications for prevention. <i>Developmental Psychobiology</i> , 52(3), 263–276. https://doi.org/10.1002/dev.20442
Picture perfect: The direct effect of manipulated instagram photos on body image in adolescent girls	Kleemans, M.; Daalmans, S.; Carbaat, I.; Anshütz, D.	2018	APA; OSG	Kleemans, M., Daalmans, S., Carbaat, I., & Anshütz, D. (2018). Picture perfect: The direct effect of manipulated instagram photos on body image in adolescent girls. <i>Media Psychology</i> , 21(1), 93–110. https://doi.org/10.1080/15213269.2016.1257392
Sleep and suicide: A systematic review and meta-analysis of longitudinal studies	Liu, R.T.; Steele, S.J.; Hamilton, J.L.	2020	APA; OSG	Liu, R. T., Steele, S. J., Hamilton, J. L., Do, Q. B. P., Furbish, K., Burke, T. A., Martinez, A. P., & Gerlus, N. (2020). Sleep and suicide: A systematic review and meta-analysis of longitudinal studies. <i>Clinical Psychology Review</i> , 81, 101895. https://doi.org/10.1016/j.cpr.2020.101895
Children and adolescents and digital media	Chassiakos, Y.L.R.; Radesky, J.; Christakis, D.; Moreno, M.A.; Cross, C.	2016	APA; NAS	Chassiakos, R., Radesky, J., Christakis, D., Moreno, M. A., Cross, C., Council on Communications Media, Hill, D., Ameenuddin, N., Hutchinson, J., Levine, A., Boyd, R., Mendelson, R., & Swanson, W. S. (2016). Children and adolescents and digital media. <i>Pediatrics</i> , 138(5).
Associations of social media use with physical activity and sleep adequacy among adolescents: Cross-sectional survey	Shimoga, S.V.; Eryana, E.; Rebello, V.; Shimoga, S. V.; Eryana, E.; Rebello, V.	2019	APA; NAS	Shimoga, S. V., Eryana, E., & Rebello, V. (2019). Associations of social media use with physical activity and sleep adequacy among adolescents: Cross-sectional survey. <i>Journal of Medical Internet Research</i> , 21(6), 14290. https://doi.org/10.2196/14290
Race-related traumatic events online and mental health among adolescents of color	Tynes, B.M.; Willis, H.A.; Stewart, A.M.; Hamilton, M.W.	2019	APA; NAS	Tynes, B. M., Willis, H. A., Stewart, A. M., & Hamilton, M. W. (2019). Race-related traumatic events online and mental health among adolescents of color. <i>Journal of Adolescent Health</i> , 65(3), 371–377.
The teenage brain: Peer influences on adolescent decision making	Albert, D.; Chein, J.; Steinberg, L.	2013	APA; NAS	Albert, D., Chein, J., & Steinberg, L. (2013). The teenage brain: Peer influences on adolescent decision making. <i>Current Directions in Psychological Science</i> , 22, 114–120.

Appendix 4D: Qualitative coding methodological detail

Qualitative coding approach

The coding framework was grounded in Elson et al.'s³ identification of evidence translation issues including citation bias, false consistency, lack of clarity, overgeneralisation, and exaggeration. This deductive starting point was combined with inductive development of additional themes that emerged from the data, permitting exploration of communication strategies at the level of individual evidence use that Elson et al.'s work did not originally capture.⁴ This abductive approach – combining theoretical grounding with empirical discovery – allowed maintenance of theoretical focus while remaining open to unexpected patterns.⁵

Analytical scope

Given the significant length difference between NASEM's comprehensive report (255 pages) and the shorter APA and OSG documents (6-25 pages), the NASEM analysis focuses on Chapter 3 "Potential Benefits of Social Media" and Chapter 4 "The relationship between social media and mental health" only, as these chapters are most similarly aligned with the content and scope of the other two reports. This analytical scope aimed to provide comparable content coverage while maintaining the integrity of each organisation's communication approach.

Coding framework and process

Our analysis built on Elson et al.'s⁶ framework identifying common problems in evidence translation, including citation inaccuracies, selective presentation of findings, lack of clarity, overgeneralisation, and exaggeration. We developed a detailed coding scheme through collaborative analysis, with two researchers initially working together to establish protocols and refine categories before systematic coding of all three reports.

Two independent coders (SLH and ANON) analysed a subset of claims to establish protocols and develop the coding rubric, with disagreements resolved through discussion. Following this calibration phase, a single coder (SLH) completed the remaining analysis using NVivo qualitative analysis software (14.24.0). Through iterative rounds of coding, themes were refined and consolidated into a codebook addressing both individual citation use and broader evidence synthesis patterns. The final analysis involved systematic application of this codebook across all three reports, with each instance of thematic patterns documented and categorised by organisation. The coders were not blinded to the report source. Table D.1 presents the complete coding schema developed through this process. The full codebook with all observed instances of each theme is also linked.

For transparency, we also include here the full list of instances coded for each theme in this qualitative analysis. We wish to highlight that the intention of this study was not to *quantify* these occurrences, but to identify themes and patterns of evidence translation practices within and across the three reports studied. The below table should not be treated as a comprehensive accounting or citation audit, but is instead intended to demonstrate examples of the communication patterns we discuss in our chapter.

[WHR2026_CH4_AppendixD_CompleteCodebook](#)

Limitations

Our qualitative analysis coding schema represents constructed analytical categories rather than natural or objective classifications. While we developed these categories systematically through iterative refinement and grounded them in existing frameworks, they reflect particular analytical choices about how to characterise evidence translation practices. Different researchers might construct alternative categorisation schemes that reveal different patterns. Additionally, resource constraints meant that only a single

coder conducted the full comparative analysis following initial collaborative protocol development. While systematic application of the coding framework promotes consistency, independent verification by additional coders would strengthen confidence in identified patterns. We welcome future research appraising quality patterns in evidence use for professional science organisations reviewing social media and mental health research, whether using our framework or developing alternative approaches.

Table 4D.1: Qualitative analysis codebook

Code	Description	Illustrative example	Instances observed ⁷		
			APA	NASEM	OSG
Citation accuracy and contextual detail					
Themes associated with the use of citations and how they are contextualised and explained in text.					
Misleading or inaccurate citations	Report uses misleading or inaccurate citations: citations which are topically irrelevant to the claim at hand, or citations whose conclusions do not support the claim. Additionally, citations which are used in a way which is misrepresentative but not strictly incorrect. Reader may be misled as to the contents of conclusions of the cited work.	"The lack of time limits on social media use similarly is challenging for youth, particularly during the school day or at times when they should be doing homework" – Citation investigates how laptop-based learning may impede concentration of neighbours in college settings. Study does not focus on youth, social media, and does not include screen time limits. (APA 2024, pg 3)	15	0	3
Contextualisation and depth patterns	Report engages with cited work with a high level of detail and contextualisation given to the reader.	High detail: "A cross-sectional study of middle schoolers, for example, found that youth who had more body dissatisfaction engaged with social media more and reported more online social anxiety, depressive symptoms, and difficulty with offline relationships" (NASEM, pg 98)	0	7	4
	Report glosses over particulars of the cited research or otherwise fails to explain or detail what the study investigated or concluded.	Low detail: "[Frequent social media use] could increase sensitivity to social rewards and punishments." (OSG, pg 5)	9	2	6
Citation clumping	Report makes a claim and then cites several articles at once with limited explanation or contextualisation. Cited articles are assumed to be about the same finding.	"Data suggest that youths' psychological development may benefit from this type of online social interaction, particularly during periods of social isolation, when experiencing stress, when seeking connection to peers with similar developmental and/or health conditions, and perhaps especially for youth who experience adversity or isolation in offline environments." – The four cited studies included: one investigating positive and negative online experiences in adolescents during COVID-19, another focused on Peruvian youth specifically, a literature review about TikTok-based treatment adherence interventions for young adults with chronic health conditions, and an exploratory content analysis of the hashtag #TIDlookslikeme investigating social media-based self-disclosure among users with Type 1 Diabetes. (APA 2023, pg 4)	3	1	3

Table 4D.1: Qualitative analysis codebook

Code	Description	Illustrative example	Instances observed ⁷		
			APA	NASEM	OSG
Engaging with complexities in evidence integration and evaluation					
Themes associated with how organisations evaluate and integrate the broader evidence base.					
Limitation acknowledgement	Report acknowledges limitations of individual pieces of evidence.	"A 2018 meta-analysis found mobile phone use in the classroom to modestly interfere with student learning and academic performance, although this small effect was driven more by undergraduates than K through 12 students" (NASEM, pg 101)	0	7	0
	Report acknowledges some limitations within the social media science field more broadly.	"Relatively few studies have been conducted with marginalized populations of youth, including those from marginalized racial, ethnic, sexual, gender, socioeconomic backgrounds, those who are differently abled, and/or youth with chronic developmental or health conditions." (APA 2023, pg 3)	6	12	6
Engagement with disconfirmatory evidence	Report engages with disconfirmatory evidence; evidence which suggests alternative findings or explanations.	"Some studies have shown that the association between social media use and measures of depression and anxiety is similar for male and female adolescents; others have seen the association only among girls (Keles et al., 2020). Other investigators have suggested that passive social media use may predict more problems in female teens and active use in male teens (Frison and Eggermont, 2017)." (NASEM, pg 107)	2	6	1
Calibrating certainty to rhetoric and conclusion strength					
Themes associated with how evidence is overall communicated for public guidance.					
Generalisation or vagueness	Report makes stronger claims or conclusions than are necessarily warranted by the supporting evidence or is very vague.	"If such sizable effects occurred in college-aged youth, these findings raise serious concerns about the risk of harm from social media exposure for children and adolescents who are at a more vulnerable stage of brain development" (OSG, pg 7)	12	0	5
Exaggeration	Report implies larger public health risks than could be supported by effect-size estimates within and across studies.	"Youth are easily deceived by predators and other malicious actors who may attempt to interact with them on social media channels." (APA 2024, pg 3)	3	1	5
Strong definitiveness	The report is strongly definitive above and beyond what is clearly entailed by the cited evidence.	"Restricting application downloads at the device level does not fully restrict youths' access and will not meaningfully improve the safety of social media platforms. Allowing platforms to delegate responsibility to app stores does not address the vulnerabilities and harms built into the platforms." (APA 2024, pg 4)	8	1	3
Strength of overall conclusions	Examples of how strong, moderated, or uncertain overarching claims or recommendations are in the report.	"The committee sympathizes with some parents' desire for authoritative prescriptions on teenagers' social media use but is also mindful of overreaching the data" (NASEM, pg 120)	3	7	9
		"Our children and adolescents don't have the luxury of waiting years until we know the full extent of social media's impact. Their childhoods and development are happening now. While social media use can have positive impacts for some children, the evidence noted throughout this Surgeon General's Advisory necessitates significant concern with the way it is currently designed, deployed, and utilized." (OSG, pg 13)			

Endnotes

- 1 Richards et al. (2025).
- 2 European Commission (2024); Feng (2024); Oxford Communications (2025); University of York (2025).
- 3 Elson et al. (2019).
- 4 Bingham (2023); Vila-Henninger et al. (2024).
- 5 Thompson (2022).
- 6 Elson et al. (2019).
- 7 While our codebook documents the frequency of observed instances for transparency, these raw counts should be interpreted cautiously given the qualitative nature of this analysis and substantial differences in document length (APA: 6-11 pages; NASEM: 287 pages; OSG: 25 pages). Rather than treating frequencies as precise quantitative measures, we identify patterns where certain practices appeared more commonly in some reports than others, using specific examples throughout the results to illustrate these observed tendencies.

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