

"Headlines rarely soothe nerves": An Analysis of News Coverage of Social Media Mental Health Research

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ABSTRACT

"Is social media causing childhood depression?" Questions posed in headlines like these about the impact of social media on mental health have been the subject of significant research and media attention. Knowledge about scholarly work for the general public, as well as legislators and others with the power to effect change, is often mediated by journalists and the decisions they make about how to report on research, and as one such news article put it, "headlines rarely soothe nerves." This analysis of 118 news articles about social media mental health research from 2018 to 2023 explores patterns in how research is generally framed, as well as how its methodology, findings, and recommendations are portrayed in the media. We include provocations to the research community on how the patterns we identify might inform the public's view on this topic, and considerations for how they might also improve our own reporting of research.

CCS CONCEPTS

• **Human-centered computing** → **Collaborative and social computing**.

KEYWORDS

media, mental health, news coverage, social media

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1 MOTIVATION

"Is social media causing childhood depression?" [41] "Is social media bad for your health?" [15] For years, news headlines like these have been asking the question that many people and researchers have been asking themselves: how does social media impact us? In particular, how does it impact our mental health? The CSCW research community is concerned with understanding social media's affordances and their impacts, including on mental health [25] [10] [3] [2] [36]. The effects described in research and mass media have

informed recent moves to regulate social media, particularly for children [16] [23] [21] [18].

Mass media influences the public's thinking, behavior, and emotions [4]. Prior research across diverse fields has examined how media and news portrayal might impact attitudes and knowledge about technology [11, 12] and the uptake of new scientific innovation [37]. Moreover, the way that research is portrayed in news media is an important object of study because most non-academics typically do not interact directly with research via journals, conferences, or literature reviews [33], particularly since these publications are often locked behind paywalls.

Therefore, knowledge about research for the public, as well as legislators and others with the power to effect relevant change, is often mediated by journalists and the decisions they make about how to report on research. These decisions include what research is (not) covered, who is (not) interviewed, how quotes are edited, how accurate headlines are, how much of the author's opinion is inserted, and more. Smith et al consider the media production pipeline from research lab to mass media, and how choices made at each step might cause miscommunication, from omission of scientific detail to sensationalization [34, 35]. Thus, the way that research is covered influences its effects. This might be understood through the theory of framing, and in particular media frames, which provide the audience with schemas of interpretation that "select some aspects of a perceived reality and make them more salient in a communicating text" [32]. We look to media coverage of social media mental health research to explore these potential frames, as well as provide insight into what the general public is likely to know about these topics. In pursuit of this goal, we conducted a content analysis of 118 articles from news organizations spanning six years, guided by the overarching research question: **How is social media and mental health related research being covered in the media?**

2 METHODS

Our search terms were "mental health" AND "social media" AND "research", entered into the Google News search engine (as a proxy for what might be most visible to an average news consumer). We stratified our sample across time; using the date range filter beginning in 2018, we collected the first two articles per month that met our inclusion criteria. Articles from news publications were included (reports, news stories, opinion pieces and editorials). This resulted in articles from publications of all sizes (international, national, local, university, and student) that reported on research of all kinds, including nonprofit, government, academic and industry studies. There were some months when there were no major news stories about research. If there were not one or two relevant articles within the first three pages of results, gaps were left in the dataset.



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This data collection process yielded a total of 118 articles from January 2018 through April 2023 that were included in analysis.

After collecting the dataset, the first author conducted initial open coding on a subset of the data, developed the codebook in discussion with the second author, and then the first author applied it to each article in the dataset [31]. The codebook was influenced by inductive reasoning derived from engagement with the dataset, as well as deductive motivation from aspects of the overarching research question. Notes about rhetorical choices and other themes and trends were made in a separate document during the coding process, and discussed between the first and second author.

Our method has some limitations that readers should keep in mind when interpreting the results. The dataset was collected from Google News and consisted of English-language publications; articles, research, and research participants were overwhelmingly American or British. This work should be interpreted with this limitation in mind. Additionally, the search terms used were intentionally broad. This choice likely led to a greater presence of “reviews” of current work, and fewer narrowly focused articles. The authors are qualitative information science researchers at a large American university. This has influenced their opinions about scientific work, both rhetorically and methodologically, which in turn affects some choices made in analysis about what was important to focus on.

3 ANALYSIS

We explore patterns in article coverage, starting with frames about social media’s mental health impact, with respect to both the articles overall and headlines. We then look at how research methodology, findings, and recommendations were described. In addition to descriptive findings, we speculate on the potential consequences of these patterns and connections to other work.

3.1 Overall Framing and Headlines

At a high level, we coded for how an article characterized the impact of social media on mental health. An article was coded as “bad” when it described primarily negative impacts on mental health (41.5% of articles) and “bad (with disclaimer)” when a “bad” article contained some brief statement lending uncertainty to findings (e.g., “this study only proves correlation”)(19.5% of articles). 22.9% of articles described both positive and negative mental health impacts of social media; 6.8% concluded that social media was “not bad” for mental health; and only 9.3% of articles concluded that social media was “good” for mental health. Thus, the dominant framing indicated that social media had *at least some negative consequences for mental health*.

The next most common frame approached *the impact of social media as complicated or mixed*. We speculate that a potential consequence of this is uncertainty, in contrast to articles that make decisive claims (“bad” or “good”). Framings that are more uncertain might leave more room for other factors to influence the message a reader takes away. For example, personal values and religious beliefs act as “convenient mental shortcuts for judging technologies that are surrounded by a significant degree of scientific uncertainty” [33]. A few articles that described mixed conclusions included critique of news coverage that takes a definitive, negative stance. This

merits further attention on how news coverage might critically engage, not only with research, but with itself.

“In the popular media — where the vast majority of people get their information on this subject — the story is often some version of ‘social media is bad, especially for younger people.’ ... ‘If anything, our best evidence to date suggests that social media does not have a meaningful impact on well-being. **However, this story — that it’s very complicated, and there’s a lot we don’t know — does not generate many clicks,**” he explained.” [17]

3.1.1 “Headlines rarely soothe nerves”: [24]: *Headlines and Clickbait*. We compared the valence of headlines to that of the article text. In this dataset, a higher ratio of headlines were outright negative (61% compared to 41.5% of the article text). This coincides with previous research that’s shown negative headlines increase clickthrough rates on news articles [30]. A fifth of headlines gave little to no hint about the conclusions of the article, which might be considered another form of clickbait (e.g., “How Does Habitual Social Media Use Impact Teens’ Mental Health?” [22]).

Article subheadings or ledes also provide introductions or summaries of the articles. Ledes in our dataset often reflected the same tendency toward negativity or uncertainty found in headlines (e.g., “*But just how bad is social media for our mental health?*” [28]). These types of “leading questions,” seeming to contain their own answer, set the tone for the reader and act as a part of the media frame about what is relevant and important about the topic [32].

3.2 Coverage of Research Findings

We also coded each article for described research findings, including mental health topics and population studied.

3.2.1 “Specifically, research shows that the use of social media is associated with: ...” [6]: *Mental Health Topics Discussed*. 196 distinct mental health symptoms, disorders, or effects were mentioned across 118 articles, with an average of 8 topics per article. 38.1% of articles cited more than one study, which might increase the number of topics raised. Additionally, articles tended to use a variety of terms to refer to singular concepts (e.g., a research study described ADHD symptoms and the article referred to “psychiatric problems” and “behavioral problems” [27]). We speculate that, in some cases, accurate descriptions of study findings and metrics may get lost in loosely equivalent terms.

The most frequently mentioned topics were *depression* (63 times), *anxiety* (51), *comparison* (40), and *sleep disruption* (36). The relationship described between social media and topic could be neutral (social media is linked to X), positive (social media improves X), or negative (social media hurts X). Some articles described differing relationship valences for the same mental health topic, mirroring the framing uncertainty described in Section 3.1.

One notable trend in the content of the dataset was a general recognition of an *overall mental health crisis*. Descriptions of social media as exacerbating underlying issues (discrimination, the pandemic, preexisting mental illness) is mentioned in 15 articles. This general mental health crisis is referenced in statistics used to frame unrelated, correlational social media research in articles with titles

like "Anxiety on rise among the young in social media age" [7] and "Youth suicide is on the rise and social media, mental health issues are playing a role" [42].

3.2.2 "...action can't come fast enough for the teens caught up by social media's dark side" [38]: *Young People and Social Media*. The most prevalent topic-demographic combination was social media's negative mental health impact on young people (children, teens, college-age). 61% of articles covered this demographic, with calls to action for parents in 31 articles. Jonathan Haidt, collaborator of oft cited Jean Twenge (10.2% of articles), authored an editorial that describes many of the common talking points in coverage of social mental health research about young people.

"The available evidence suggests that Facebook's products have probably harmed millions of girls...1. Harm to teens is occurring on a massive scale...2. The timing points to social media...3. The victims point to Instagram...4. No other suspect is equally plausible... **Correlation does not prove causation, but nobody has yet found an alternative explanation for the massive, sudden, gendered, multinational deterioration of teen mental health during the period in question.**" [14]

While non-editorial articles and expert quotes usually used softer language ("linked" or "associated"), these overall arguments about the timing of the crisis vs introduction of smartphones, victim testimonies (e.g., a father who blames his daughter's suicide on social media [5]), and an absence of other explanatory factors pervade across the articles that posit social media as a threat to youth (in particular, girls: the differential mental health impact of social media on girls was mentioned in 21 articles).

3.3 Coverage of Research Methodology

Most articles that referenced one or more studies also included details about how the study was conducted to contextualize the findings, in particular, discussions of the study's methodological strengths and limitations.

3.3.1 "Correlation does not prove causation, but nobody has yet found an alternative explanation..." [14]: *Coverage of Research Limitations*. A majority of the dataset discussed correlation versus causation. One prevalent pattern was the use of single-sentence disclaimers employing contrasting conjunctive adverbs like "however" and "nonetheless". An article reports on the findings of the research; they add a short sentence that acknowledges the study could only prove correlation; finally, they reassert the importance of the findings using one of the aforementioned adverbs.

"Inevitably there is the **chicken and egg question**, as to whether more dissatisfied children, who to begin with are less pleased with their body shape and have fewer friends then spend more time on social media. **Nonetheless**, it is likely that excessive use of social media does lead to poorer confidence and mental health," said Prof Stephen Scott... [9]

Previous work has noted that in translation from lab to news, there may be omission of scientific detail, inaccurate claims from oversimplification, and conflation of parts with the work as a whole

[34, 40]. They suggest that researchers "practice verbalizing accurate simplifications and analogies of scientific methods ahead of interviews" [34]. In the dataset, some journalists and researchers appeared to pursue greater scientific accuracy and nuance by lengthening discussions of methodology. Articles like this [29] opinion piece aim to provide education on what research methods can tell us and fallacies that journalists and researchers might fall into. However, likely because of the extra time it takes to explain methodological nuance, these discussions were often confined to long articles and editorials, not the brief reports that composed most of the dataset (51.7% of articles mentioned only one piece of research), which echoes [34]. Including more detail may not be an option; rather, there should be a focus on honing the ability to describe a nuanced study in fewer, more accessible words.

3.3.2 "This study is an important scientific advance because it uses an experiment" [44]: *Coverage of Research Strengths*. Another trend in research methodological descriptions was the tendency to include just enough detail to make a claim about the relative superiority of the described study in relation to previous research. These articles were often attuned to the correlation versus causation debate and usually described research that was experimental or longitudinal.

"...Plenty of studies have found correlations between higher social media use and poorer mental health...But two new studies underline this reality by showing **not just correlation, but causation**...The results **confirm what others have suggested**, with the added bonus of being one of the few studies to use a **real experimental design**, which has the power to show causation. [43]

This pattern illuminates a tension that researchers might feel while making their work accessible to a non-academic audience – the balance between too many and too few caveats. Smith et al. point out that sensationalization is "not necessarily problematic," as emotional stories are more interesting to a mass audience than purely rational ones [34]. However, open questions remain regarding what amount or type of simplification or sensationalization are acceptable in service of accurate public knowledge. The description of research strengths as completely correcting for the perceived shortcomings of previous work might be seen as a type of sensationalization, exaggerating the scientific power of a particular type of work. How might we talk about our work in a way that is compelling and still accurate?

3.4 Coverage of Research Recommendations

81.4% of articles in the dataset (96 articles) included one or more "calls to action". These were explicit suggestions for what should be done as a result of the work cited, either quoted directly or posited by the author of the article.

3.4.1 "So, what can smartphone addicts do with these findings?" [13]: *Individual Action*. The most frequently recommended action was individual action (77), differentiated by action suggested to parents (31), the general public (39), and mental health practitioners (7). These articles included many youth impact articles, as described in 3.3.2, as well as listicle or interview-style articles with titles like "How To Keep Your Instagram Feed From Depressing You" [39].

26.3% of the dataset included language that referred to social media overuse as an addiction (“addictive”, “compulsive”, and “detox”). This medicalization of the social phenomenon of increased time online is a part of an overall tendency toward placing accountability on individuals rather than institutions [19]. This is likely influenced by the bias toward American publications in the dataset, as well as a bias toward the Western world in study participants. This phenomenon of “addiction”-izing social media usage also echoes findings on mental health discourse in mass media about the prevalence of stigmatizing moral framings [20].

3.4.2 “It’s embarrassing we know so little” [26]: *Collective Action*. 26 articles included a call to action for further research (“Social media data needed for ‘harm’ research, say doctors” [5]). They included calls for specific kinds of research (i.e., longitudinal studies), calls for research based on unavailable data (i.e., increased transparency from tech companies), and calls for greater specificity and nuance (i.e., research differentiating different kinds of social media activity).

Government action was mentioned 18 times across the dataset (half in non-American settings, including the UK, China, and Norway), and action taken by technology companies was mentioned 19 times (8 in non-American settings). 11 articles mentioned both types. Government action included regulation of social media companies (“If Facebook and other social media platforms can’t show their products are harmless, Congress has to step in to protect children” [38]) and increased funding for research/mental health services. Action for technology companies included transparency for impartial research and changes to platform design to minimize harm. Articles about legislative action to address social media’s impact were not included in the dataset if they did not cite any expert or study. The relative absence of high-level change in research-oriented news merits investigation, particularly of any disparity between research text and news articles. Does research tend to individualize solutions as news coverage does, or is it a side effect of the translation process? For articles that report on legislation that do not include research, what kinds of evidence are cited? What kinds of evidence are cited in the action (policy, bill, press release) itself?

4 CONCLUSIONS AND FUTURE WORK

This analysis of social media mental health research in media extends the ongoing conversation in HCI about how research is portrayed and how this portrayal might be made more faithful to its intent [1, 11, 12, 34, 35, 40]. Our results indicated negative orientations toward social media were prevalent, compounded by unclear or negative clickbait in headlines and ledes. Consistently, journalists and cited experts chose simplified depictions of research methodology, using a broad range of terms to refer to study metrics and favoring explanations of the relative methodological superiority of studies. Studies and articles most often covered research about young people and call social media a contributing factor to a mental health crisis among this demographic. A fifth of articles come to mixed conclusions about social media’s impact and almost a third include calls for further work; this contributes to an overall frame of uncertainty about mental health impact. Finally, most articles in the dataset included one or more calls to action, which were overwhelmingly oriented towards individual action, while collective action was present but less common.

These findings may be valuable for journalists, researchers, legislators and members of the general public as they illuminate potential places where extra attention should be paid to potentially impactful disconnects between science and public [33]. Echoing work on the media production pipeline as a place where miscommunication can be created [34, 35], these descriptive findings relevant to health and health HCI researchers provide a useful set of considerations for translating research accurately and effectively into media. This is particularly important as mental health impacts of social media are currently the subject of significant legislative consideration.

This analysis was limited to the content of news articles. Future work might take the next step to compare the original studies cited to their coverage to gauge the accuracy of journalistic interpretations to academic counterparts. Future work could also engage with news consumers to gauge the impact journalistic frames may or may not have on public opinion regarding these issues [8]. Other dimensions that became apparent over the course of analysis but were not examined in detail include the impact of the pandemic on the overall conversation about social media and how the researcher’s background (i.e., public health, psychology, HCI, business) might impact the way findings are presented. The influence of culture was briefly discussed in terms of how a bias towards American coverage might change the calls to action reported. The effect of cultural or national context on these dimensions could be further explored with a study of intentionally international news publications and research.

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REFERENCES

- [1] Tanja Aitamurto, Mike Ananny, Chris W. Anderson, Larry Birnbaum, Nicholar Diakopoulos, Matilda Hanson, Jessica Hullman, and Nick Ritchie. 2019. HCI for Accurate, Impartial and Transparent Journalism: Challenges and Solutions. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19)*. Association for Computing Machinery, New York, NY, USA, 1–8. <https://doi.org/10.1145/3290607.3299007>
- [2] Reza Ghaiomy Anaraky, Guo Freeman, Oriana Rachel Aragón, Bart P Knijnenburg, and Meghna Tallapragada. 2019. The Dark Side of Social Media: What Makes Some Users More Vulnerable Than Others?. In *Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing (CSCW '19)*. Association for Computing Machinery, New York, NY, USA, 185–189. <https://doi.org/10.1145/3311957.3359493>
- [3] Nazanin Andalibi, Pinar Ozturk, and Andrea Forte. 2017. Sensitive Self-Disclosures, Responses, and Social Support on Instagram: The Case of #Depression. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '17)*. Association for Computing Machinery, New York, NY, USA, 1485–1500. <https://doi.org/10.1145/2998181.2998243>
- [4] Albert Bandura. 2001. Social Cognitive Theory of Mass Communication. *Media Psychology* 3, 3 (Nov. 2001), 265–299. https://doi.org/10.1207/S1532785XMEP0303_03
- [5] BBC. 2020. *Social media data needed for ‘harm’ research, say doctors*. BBC. <https://www.bbc.com/news/health-51134545>
- [6] Patrick Bensen. 2021. *The Warning Sign: How Social Media Companies Can Address Social Responsibility*. Forbes. <https://www.forbes.com/sites/forbesbusinesscouncil/2021/04/16/the-warning-sign-how-social-media-companies-can-address-social-responsibility/?sh=1dd5ee5213b4>
- [7] Robert Booth. 2019. *Anxiety on rise among the young in social media age*. The Guardian. <https://www.theguardian.com/society/2019/feb/05/youth-unhappiness-uk-doubles-in-past-10-years>
- [8] Paul Brewer, David Wilson, James Bingaman, Ashley Paintsil, and Lucy Obozintsev. 2020. *U.S. Public Opinion about Artificial Intelligence: Declining*

- Support for Development and Divided Views on Facial Recognition. University of Delaware. https://www.researchgate.net/publication/353714507_US_Public_Opinion_about_Artificial_Intelligence_Declining_Support_for_Development_and_Divided_Views_on_Facial_Recognition
- [9] Denis Campbell. 2019. *Depression in girls linked to higher use of social media*. The Guardian. <https://www.theguardian.com/society/2019/jan/04/depression-in-girls-linked-to-higher-use-of-social-media>
- [10] Stevie Chancellor, Zhiyuan Lin, Erica L. Goodman, Stephanie Zerwas, and Munmun De Choudhury. 2016. Quantifying and Predicting Mental Illness Severity in Online Pro-Eating Disorder Communities. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW '16)*. Association for Computing Machinery, New York, NY, USA, 1171–1184. <https://doi.org/10.1145/2818048.2819973>
- [11] Wallace Chigona, Phakamani Mavela, Sarah Mulaji, Shalomo Mutetwa, Robin Moyanga, and Hakuavanh Ndor. 2021. Critical Discourse Analysis on Media Coverage of COVID-19 Contact Tracing Applications: Case of South Africa. In *C&T '21: Proceedings of the 10th International Conference on Communities & Technologies - Wicked Problems in the Age of Tech (C&T '21)*. Association for Computing Machinery, New York, NY, USA, 15–24. <https://doi.org/10.1145/3461564.3461580>
- [12] Ching-Hua Chuan, Wan-Hsiu Sunny Tsai, and Su Yeon Chu. 2019. Framing Artificial Intelligence in American Newspapers. In *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society (AI/ES '19)*. Association for Computing Machinery, New York, NY, USA, 339–344. <https://doi.org/10.1145/3306618.3314285>
- [13] Matt Davis. 2018. *Cutting social media use to 30 mins per day significantly reduces depression and loneliness*. BigThink. <https://bigthink.com/neuropsych/social-media-causes-depression-loneliness/>
- [14] Jonathan Haidt. 2021. *The Dangerous Experiment on Teen Girls*. The Atlantic. <https://www.theatlantic.com/ideas/archive/2021/11/facebooks-dangerous-experiment-teen-girls/620767/>
- [15] Sarah Hunsinger. 2022. *Is social media bad for your health?* Red MSU Denver. <https://red.msudenver.edu/2022/is-social-media-bad-for-your-health/>
- [16] Mary Clare Jalonick. 2022. *Ban social media for kids? Fed-up parents in Senate say yes*. ABC News. <https://abcnews.go.com/Business/wireStory/ban-social-media-kids-fed-parents-senate-99066496>
- [17] Annie Lennon. 2022. *Does social media impact mental health? What we really know*. Medical News Today. <https://www.medicalnewstoday.com/articles/does-social-media-impact-mental-health-what-we-really-know>
- [18] Cristiano Lima. 2023. *A new bill would ban anyone under 16 from using social media*. The Washington Post. <https://www.washingtonpost.com/politics/2023/02/02/new-bill-would-ban-anyone-under-16-using-social-media/>
- [19] Margaret Lock. 2004. Medicalization and the Naturalization of Social Control. *Encyclopedia of Medical Anthropology* (2004), 116–125. https://doi.org/10.1007/0-387-29905-X_13
- [20] Shravika Mittal and Munmun De Choudhury. 2023. Moral Framing of Mental Health Discourse and Its Relationship to Stigma: A Comparison of Social Media and News. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23)*. Association for Computing Machinery, New York, NY, USA, 19. <https://doi.org/10.1145/3544548.3580834>
- [21] ABC NEWS. 2023. *Utah state senator addresses scope of new law regulating kids' social media access*. ABC News. <https://abcnews.go.com/Politics/utah-state-senator-addresses-scope-new-law-regulating/story?id=98405585>
- [22] University of North Carolina at Chapel Hill. 2023. *How Does Habitual Social Media Use Impact Teens' Mental Health?* Technology Networks. <https://www.technologynetworks.com/neuroscience/news/how-does-habitual-social-media-use-impact-teens-mental-health-368856>
- [23] Robin Opsahl. 2023. *Social media ban for minors moves forward with exception for parental permission*. Iowa Capital Dispatch. <https://iowacapitaldispatch.com/2023/04/10/social-media-ban-for-minors-moves-forward-with-exception-for-parental-permission/>
- [24] Amy Orben. 2018. *The trouble knowing how much screen time is 'too much'*. BBC. <https://www.bbc.com/news/technology-42907037>
- [25] Sungkyu Park, Inyeop Kim, Sang Won Lee, Jaehyun Yoo, Bumseok Jeong, and Meeyoung Cha. 2015. Manifestation of Depression and Loneliness on Social Networks: A Case Study of Young Adults on Facebook. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '15)*. Association for Computing Machinery, New York, NY, USA, 557–570. <https://doi.org/10.1145/2675133.2675139>
- [26] Kari Paul. 2022. *What TikTok does to your mental health: 'It's embarrassing we know so little'*. The Guardian. <https://www.theguardian.com/technology/2022/oct/30/tiktok-mental-health-social-media>
- [27] Gary Polakovic. 2018. *Smartphone use linked to behavioral problems in kids*. USC News. <https://news.usc.edu/146032/digital-media-use-linked-to-behavioral-problems-in-kids/>
- [28] Clementine Prendergast. 2020. *'The Social Dilemma': Are Facebook and Instagram Really Affecting Our Mental Health?* Vogue. <https://www.vogue.com/article/the-social-dilemma-impacts-of-social-media>
- [29] Stuart Ritchie. 2023. *Don't panic about social media harming your child's mental health – the evidence is weak*. iNews. <https://inews.co.uk/news/technology/dont-panic-about-social-media-harming-your-childs-mental-health-the-evidence-is-weak-2230571>
- [30] Claire E. Robertson, Nicolas Prolochs, Kaoru Schwarzenegger, Philip Parmamets, Jay J Van Bavel, and Stefan Feuerriegel. 2023. Negativity drives online news consumption. *Nature Human Behavior* (March 2023). <https://doi.org/10.1038/s41562-023-01538-4>
- [31] Johnny Saldaña. 2013. *The Coding manual for Qualitative Researchers* (2nd ed.). SAGE Publications, Los Angeles, London, New Delhi, Singapore, Washington DC. (book).
- [32] Dietram A. Scheufele. 1999. Framing as a Theory of Media Effects. *Journal of Communication* 49, 1 (March 1999), 103–122. <https://doi.org/10.1111/j.1460-2466.1999.tb02784.x>
- [33] Dietram A. Scheufele. 2013. Communicating science in social settings. *Proceedings of the National Academy of Sciences of the United States of America* 110 (Aug. 2013), 14040–14047. <https://doi.org/10.1073/pnas.1213275110>
- [34] C. Estelle Smith, Eduardo Nevarez, and Haiyi Zhu. 2020. Disseminating Research News in HCI: Perceived Hazards, How-To's, and Opportunities for Innovation. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. Association for Computing Machinery, New York, NY, USA, 1–13. <https://doi.org/10.1145/3313831.3376744>
- [35] C. Estelle Smith, Xinyi Wang, Raghav Pavan Karumur, and Haiyi Zhu. 2018. [Un]breaking News: Design Opportunities for Enhancing Collaboration in Scientific Media Production. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. Association for Computing Machinery, New York, NY, USA, 15–24. <https://doi.org/10.1145/3173574.3173955>
- [36] Preeti Srinivasan. 2020. 'Am I Overwhelmed with This Information?': A Cross-Platform Study on Information Overload, Technostress, Well-Being, and Continued Social Media Usage Intentions. In *Conference Companion Publication of the 2020 on Computer Supported Cooperative Work and Social Computing (CSCW '20 Companion)*. Association for Computing Machinery, New York, NY, USA, 165–170. <https://doi.org/10.1145/3406865.3418371>
- [37] Yulia A. Strekalova. 2015. Informing Dissemination Research: A Content Analysis of U.S. Newspaper Coverage of Medical Nanotechnology News. *Science Communication* 37 (apr 2015), 14040–14047. <https://doi.org/10.1177/1075547014555025>
- [38] The Editorial Board USA Today. 2021. *Hold Facebook accountable: Protect teens from Instagram's dark side*. USA Today. <https://www.usatoday.com/story/opinion/todaysdebate/2021/09/24/facebook-owns-instagram-mental-health-teens/5801735001/>
- [39] Kimberly Truong. 2018. *How To Keep Your Instagram Feed From Depressing You*. Refinery29. <https://www.refinery29.com/en-us/social-media-mental-health-tips>
- [40] John Vines, Anja Thieme, Rob Comber, Mark Blythe, Peter C Wright, and Patrick Olivier. 2013. HCI in the press: online public reactions to mass media portrayals of HCI research. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13)*. Association for Computing Machinery, New York, NY, USA, 1873 – 1882. <https://doi.org/10.1145/2470654.2466247>
- [41] Jane Wakefield. 2018. *Is social media causing childhood depression?* BBC. <https://www.bbc.com/news/technology-42705881>
- [42] Maeve Walsh. 2020. *Youth suicide is on the rise and social media, mental health issues are playing a role*. The Columbus Dispatch. <https://www.dispatch.com/story/lifestyle/health-fitness/2020/03/04/youth-suicide-is-on-rise/1589649007/>
- [43] Alice Walton. 2018. *New Studies Show Just How Bad Social Media Is For Mental Health*. Forbes. <https://www.forbes.com/sites/alicegwalton/2018/11/16/new-research-shows-just-how-bad-social-media-can-be-for-mental-health/?sh=72389ca7af44>
- [44] Rachel White. 2020. *Getting Fewer 'Likes' on Social Media Elicits Emotional Distress Among Adolescents*. UTexas News. <https://news.utexas.edu/2020/09/21/getting-fewer-likes-on-social-media-elicits-emotional-distress-among-adolescents/>