

1 AMBIKA KUMAR (*pro hac vice*)  
ambikakumar@dwt.com  
2 DAVIS WRIGHT TREMAINE LLP  
920 Fifth Avenue, Suite 3300  
3 Seattle, Washington 98104  
Telephone: (206) 757-8030  
4

5 ADAM S. SIEFF (CA Bar No. 302030)  
adamsieff@dwt.com  
6 DAVIS WRIGHT TREMAINE LLP  
865 South Figueroa Street, 24th Floor  
Los Angeles, California 90017-2566  
7 Telephone: (213) 633-6800

8 DAVID M. GOSSETT (*pro hac vice*)  
davidgossett@dwt.com  
9 MEENAKSHI KRISHNAN (*pro hac vice*)  
meenakshikrishnan@dwt.com  
10 DAVIS WRIGHT TREMAINE LLP  
1301 K Street NW, Suite 500 East  
11 Washington, D.C. 20005  
Telephone: (202) 973-4200  
12

13 ROBERT CORN-REVERE (*pro hac vice*)  
bob.corn-revere@thefire.org  
14 FOUNDATION FOR INDIVIDUAL RIGHTS AND EXPRESSION  
700 Pennsylvania Avenue SE, Suite 340  
Washington, D.C. 20003  
15 Telephone: (215) 717-3473

16 Attorneys for Plaintiff  
NETCHOICE, LLC d/b/a NetChoice  
17

18 IN THE UNITED STATES DISTRICT COURT  
19 THE NORTHERN DISTRICT OF CALIFORNIA  
20 SAN JOSE DIVISION

21 NETCHOICE, LLC d/b/a NetChoice,  
22 Plaintiff,  
23 v.  
24 ROB BONTA, ATTORNEY GENERAL  
OF THE STATE OF CALIFORNIA, in his  
25 official capacity,  
26 Defendant.  
27

Case No. 5:22-cv-08861-BLF

**DECLARATION OF  
CHRISTOPHER FERGUSON IN  
SUPPORT OF PLAINTIFF  
NETCHOICE'S RENEWED  
MOTION FOR PRELIMINARY  
INJUNCTION**

Date: January 23, 2025  
Time: 9:00 a.m.  
Dept.: Courtroom 3 – 5th Floor

Action Filed: December 14, 2022

28

1 I, Christopher Ferguson, declare as follows:

2 I am over the age of 18 and have personal knowledge of the facts set forth in this Declaration.

3 **Background**

4 1. **Title:** *Professor of Psychology, Stetson University. Psychologist licensed in*  
5 *Florida and Texas (inactive in Texas).*

6 2. **Education:** *B.A. in psychology, Stetson University. M.S. developmental*  
7 *psychology, Florida International University. Ph.D. in clinical psychology, University of Central*  
8 *Florida.*

9 3. **Previous positions:** *Associate Professor, Texas A&M International University;*  
10 *Assistant Professor, University of Wisconsin - Whitewater*

11 4. **Research focus:** *Media effects on youth including video games, social media, etc.*

12 5. **Author or co-author of:** *7 non-fiction books, approximately 268 scientific*  
13 *journal articles, book chapters, reviews, or reports.*

14 6. **Most relevant publications:**

15 **Books:**

16 Ferguson, C. J. (2023). *Catastrophe! How Psychology Explains Why Good People Make*  
17 *Bad Situations Worse.* New York: Rowman & Littlefield.

18 Ferguson, C. J. (2020). *How Madness Shaped History.* New York: Rowman & Littlefield.

19 Ferguson, C. J. (2018). *Video game influences on aggression, cognition and attention.* New  
20 York: Springer.

21 Markey, P.M., & Ferguson, C.J. (2017) *Moral combat: Why the war on video games is*  
22 *wrong.* Dallas, TX: BenBella Books.

23 Ferguson, C. J. (2016). *Media psychology 101.* New York, NY: Springer.

24 Ferguson, C. J. (2013). *Adolescents, crime, and the media: A critical analysis.* New York,  
25 NY, US: Springer Science + Business Media. doi:10.1007/978-1-4614-6741-0

**Research Publications:**

- 1  
2 Ferguson, C.J., Kaye, L.K., Branley-Bell, D., & Markey, P. (in press). There is no evidence  
3 that time spent on social media is correlated with adolescent mental health problems:  
4 Findings from a meta-analysis. *Professional Psychology: Research and Practice*.
- 5 Ferguson, C.J. (in press). Do social media experiments prove a link with mental health: A  
6 methodological and meta-analytic review. *Psychology of Popular Media*.
- 7 Ferguson, C.J. (in press). Longitudinal associations between social media use and mental  
8 health outcomes in sample of Irish youth: A brief report. *Communication Reports*.
- 9 Ferguson, C.J. (in press). Cyberbullying and its relation to right and left authoritarianism,  
10 Trait victimhood, and mental illness. *Psychology of Popular Media*.
- 11 Ferguson, C.J. (in press). Does the internet make the world worse? Depression, aggression  
12 and polarization in the social media age. *Bulleting of Science, Technology, & Society*.
- 13 Ferguson, C.J., Jeong, E.J., & Wang, J.C.K. (2023). rckthological gaming: A longitudinal  
14 study from the perspectives of mental health problems and social stress model. *The*  
15 *Journal of General Psychology*, 150, 323-343.
- 16 Ferguson, C.J. (2022). Does exposure to sexualized media lead to boys' objectification of  
17 girls and women?: A preregistered, longitudinal reanalysis of Rousseau et al. (2019).  
18 *Adolescent Psychiatry*, 12, 60-66.
- 19 Garcia, S., Ferguson, C.J., & Wang, C.K.J. (2022). Prosocial video game content, empathy  
20 and cognitive ability in a large sample of youth. *Journal of Youth and Adolescence*, 51,  
21 62-73.
- 22 Ferguson, C.J., Kaye, L., Branley-Bell, D., Markey, P., Ivory, J., Klisanin, D., et al. (2022).  
23 *Like This* Meta-analysis: Screen Media and Mental Health. *Professional Psychology:*  
24 *Research and Practice*, 53, 205-214.
- 25 Ferguson, C.J., & Heene, M. (2021). Providing a lower-bound estimate for psychology's  
26 "crud factor": The case of aggression. *Professional Psychology: Research and Practice*,  
27 52, 620-626.
- 28

- 1 Ferguson, C.J., & Wang, C.K.J. (2021). Aggressive video games are not a risk factor for  
2 mental health problems in youth: A longitudinal study. *Cyberpsychology, Behavior and*  
3 *Social Networking* 24(1), 70-73.
- 4 Ferguson, C.J. (2021). One less reason why: Viewing of suicide-themed fictional media is  
5 associated with lower depressive symptoms in youth. *Mass Communication and Society*,  
6 24(1), 85-105.
- 7 Ferguson, C.J. (2021). Links between screen use and depressive symptoms in adolescents  
8 over 16 years: Is there evidence for increased harm? *Developmental Science*, 24(1)  
9 e13008.
- 10 Turel, O., & Ferguson, C.J. (2021). Excessive use of technology: Can tech-providers be the  
11 culprits? *Communications of the ACM*, 64(1), 42-44.
- 12 Drummond, A., Sauer, J.D., & Ferguson, C.J. (2020). Do longitudinal studies support long-  
13 term relationships between aggressive game play and youth aggressive behavior? A  
14 meta-analytic examination. *Royal Society Open Science*.  
15 <https://doi.org/10.1098/rsos.200373>
- 16 Lindner, D., Tribble, M., Pilato, I., & Ferguson, C.J. (2020). Examining the effects of  
17 exposure to a sexualized female video game protagonist on women's body image.  
18 *Psychology of Popular Media Culture*, 9(4), 553-560.
- 19 Ferguson, C. J. (2019). 13 reasons why not: A methodological and meta-analytic review of  
20 evidence regarding suicide contagion by fictional media. *Suicide and Life-Threatening*  
21 *Behavior*, 49(4), 1178-1186.
- 22 Berryman, C., Ferguson, C. J., & Negy, C. (2018). Social media use and mental health  
23 among young adults. *Psychiatric Quarterly*, 89(2), 307-314.
- 24 Ferguson, C. J., Munoz, M. E., Garza, A., & Galindo, M. (2014). Concurrent and  
25 prospective analyses of peer, television and social media influences on body  
26 dissatisfaction, eating disorder symptoms and life satisfaction in adolescent girls.  
27 *Journal of Youth and Adolescence*, 43(1) 1-14.
- 28

1           7.       **Prior Expert Testimony and Compensation:** I provided a declaration in support  
2 of the plaintiffs in *Zoulek v. Hass* in the U.S. District Court for the District of Utah, Case No.  
3 2:24-cv-31-RJS-CMR. I also provided a declaration in support of the plaintiffs in *Students*  
4 *Engaged in Advancing Texas v. Paxton* in the U.S. District Court for the Western District of  
5 Texas, Case No. 1:24-cv-945-RP. I also consulted with the prosecution in the Nicholas Cruz case  
6 in Broward County, FL approximately 1 year ago. I am offering this declaration pro bono.

7           8.       In past generations, society has experienced repeated moral panics over new  
8 media and technology, ranging from novels to the radio, to comic books, to various forms of  
9 music (jazz, rock, rap, etc.), to video games and the role-playing game *Dungeons and Dragons*.  
10 In each case, politicians and scholars worried about the potentially pernicious effects of these  
11 media, often pushing for censorship/regulation. In many instances, some scholars (for instance,  
12 psychiatrist Fredric Wertham in the case of comic books) and even professional guild  
13 organizations such as American Psychological Association have been revealed as vastly  
14 overstating the evidence for harmful effects (Elson, M., Ferguson, C. J., Gregerson, M., Hogg, J.  
15 L., Ivory, J., Klisanin, D., Markey, P. M., Nichols, D., Siddiqui, S., & Wilson, J. (2019). Do  
16 policy statements on media effects faithfully represent the science? *Advances in Methods and*  
17 *Practices in Psychological Science* 2(1), 12-25.) in some cases based on very poor quality and  
18 ultimately unreplicable meta-analyses (Ferguson, C.J., Copenhaver, A. & Markey, P. (2020).  
19 Re-examining the findings of the APA's 2015 task force on violent media: A meta-analysis.  
20 *Perspectives on Psychological Science* 15(6), 1423-1443.) The question before us is whether  
21 current concerns about social media and other online platforms are a repetition of this moral  
22 panic pattern, or whether the scientific data support that these online products and services pose a  
23 unique problem for youth. I will consider this in relation to the data on youth mental health in  
24 society, experimental data, survey data of youth and families and, lastly, an examination of  
25 Moral Panic Theory.

26           9.       In preparing this declaration, I reviewed societal data regarding mental health  
27 (including research on suicide rates), experimental studies, and correlational/longitudinal studies  
28 regarding hypothesized effects of online media use.

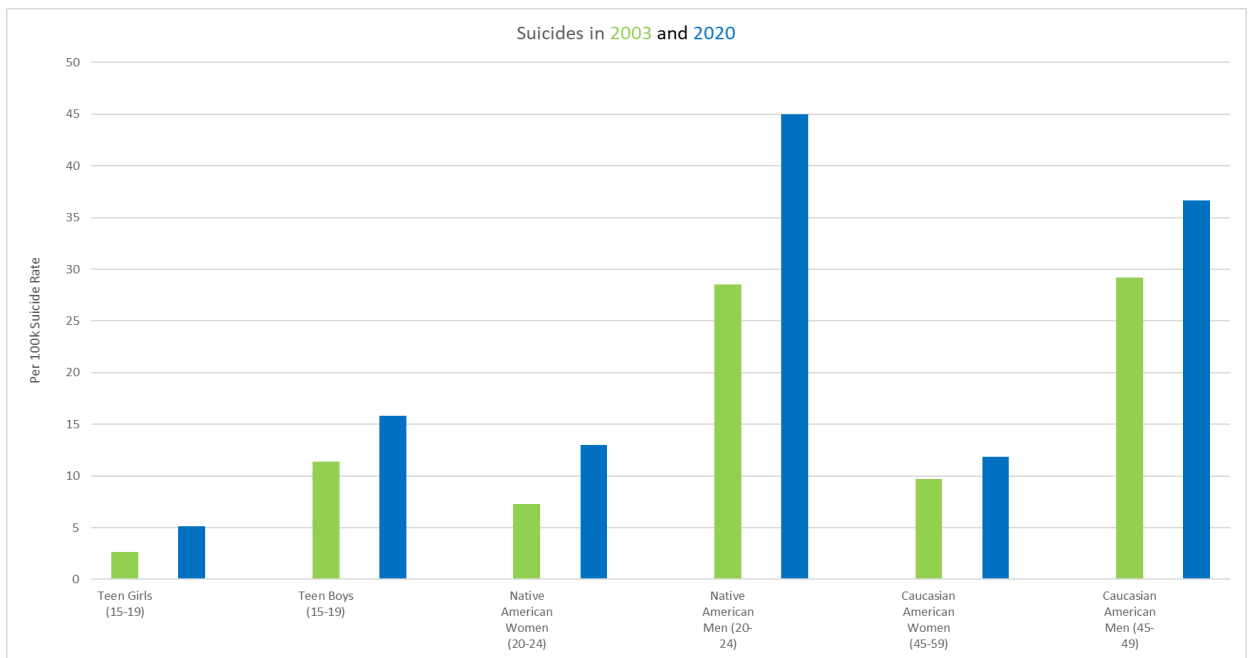
1           **Societal Data**

2           10. Critics of social media and other online platforms suggest that a proliferation of  
3 social media is directly tied to an increase in youth mental health problems. However, there is  
4 no evidence establishing a cause-and-effect relationship between these time trends. And the  
5 analysis that legislators and academics rely on ignores that mental health data for less-technology  
6 adopting older generations is actually *worse* than for teens, that these trends in youth mental  
7 health are not observed for other high-technology adopting countries in Europe or the  
8 Anglophone sphere (Canada, UK, Australia, etc.), and that other factors within the US actually  
9 provide better explanations for youth mental health trends than does use of online products and  
10 services.

11           11. First, we must understand the reliability of varying data sources. Unreliable data  
12 can come from problems with self-report, as well as reporting changes in official statistics. For  
13 instance, an oft-discussed increase in the number of hospital admissions for self-injury is now  
14 understood to mainly be a function of reporting standards which changed in the 2010s (Corredor-  
15 Waldron, A. & Currie, J. (2024). To what extent are trends in teen mental health driven by  
16 changes in reporting? The example of suicide-related hospital visits. *The Journal of Human*  
17 *Resources*, 59, S14-S40.) Similarly diagnostic changes in the American Psychiatry  
18 Association's Diagnostic and Statistical Manual in 2013 broadened criteria for many mental  
19 illnesses, making diagnosis for these conditions easier. Further, as noted in one recent book  
20 (Shrier, A., (2024). *Bad Therapy: Why Kids Aren't Growing Up*. Penguin), the 2010s saw the  
21 growth of a therapeutic industry within K12 schools, within parenting, and within the general  
22 culture. As a positive, this may have destigmatized the reporting of mental health symptoms (a  
23 point also made by Corredor-Waldron & Currie, supra), but as a negative may also have led to  
24 youth redefining minor worries and sadnesses as mental illness. As such, any trends in youth  
25 self-reported mental health or hospital admissions are likely due to changes in diagnosis,  
26 reporting standards and cultural perceptions of mental illness, all of which shifted rapidly during  
27 the 2010s.

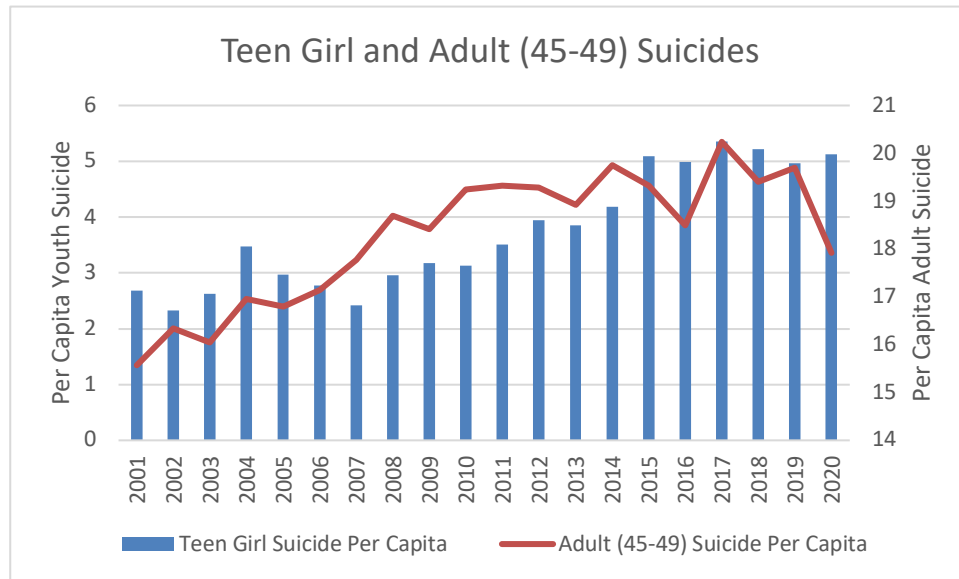
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12. As such, the most reliable data appear to be suicide data which, for the United States, is reported in the Centers for Disease Control (CDC) WISQARS database. Suicide data is not immune to reporting standards changes, but put rather bluntly, at least a body is a body and, as such, easier to count. We see from such data that teen suicides remain rare compared to other age categories, though did rise through the 2010s, only to fall in 2022. If we take the example of teen girls, often the specific focus on debates on the effects of online products and services like social media, teen girl suicide remains the lowest, by far, of any demographic, though their absolute numbers did rise through 2022, falling that year (CDC. (2024). *Vital Statistics Rapid Report*. Retrieved from: <https://www.cdc.gov/nchs/data/vsrr/vsrr034.pdf>.) For instance, suicides among middle-aged Caucasian men and suicides among mid-20s Native American men are roughly 3-5 times the rate for teen girls. The numbers for middle aged adults are particularly striking, given such individuals are less tech-adopting than teens. Thus, it is a mistake to consider teen mental health in isolation of that of their parents, and in doing so falsely equate it as having been caused by something unique to teens (e.g., social media) rather than something systemic to families.



1 13. Again, it is worth noting that suicides among teens and young adults declined in  
 2 2022 without the intervention of the state although suicides among older adults continued to  
 3 increase (CDC, *ibid.*).

4 14. Further, rates of teen suicide are directly correlated to rates of middle-aged adult  
 5 suicide, suggesting these phenomena are occurring in concert with each other. Note the trend is  
 6 similar for teen boys as teen girls. The correlation between these phenomena survives time  
 7 series analysis (suggesting it is not an ecological fallacy or frivolous correlation).



17 15. Scholar Mike Males has analyzed other CDC data to pinpoint potential causes for  
 18 this relationship between teen and adult suicide. In his data (Males, M. (2024). Why do  
 19 authorities who claim “concern” for bullied teenagers lie shamelessly about who’s bullying  
 20 them? Retrieved from: [https://mikemales.substack.com/p/why-do-authorities-who-claim-](https://mikemales.substack.com/p/why-do-authorities-who-claim-concern)  
 21 [concern](https://mikemales.substack.com/p/why-do-authorities-who-claim-concern)), he finds that social media use is not correlated to teen self-reported suicidal depression.  
 22 However, emotionally and physically abusive parenting behaviors are. This suggests that, to the  
 23 extent youth are experiencing a mental health crisis in the United States, this is due to a trickle-  
 24 down from their parents’ mental health crisis, which can take the form of abuse or, alternatively,  
 25 deaths of despair of parents due to drug overdoses or suicide. Parental mental health problems  
 26 and poor family environment are well-known predictors of youth suicide (e.g., King, R.,  
 27 Schwab-Stone, M., Flisher, A., et al. (2001). Psychosocial and risk behavior correlates of youth  
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1 suicide attempts and suicidal ideation. *Journal of the American Academy of Child & Adolescent*  
 2 *Psychiatry*, 40, 837-846.)

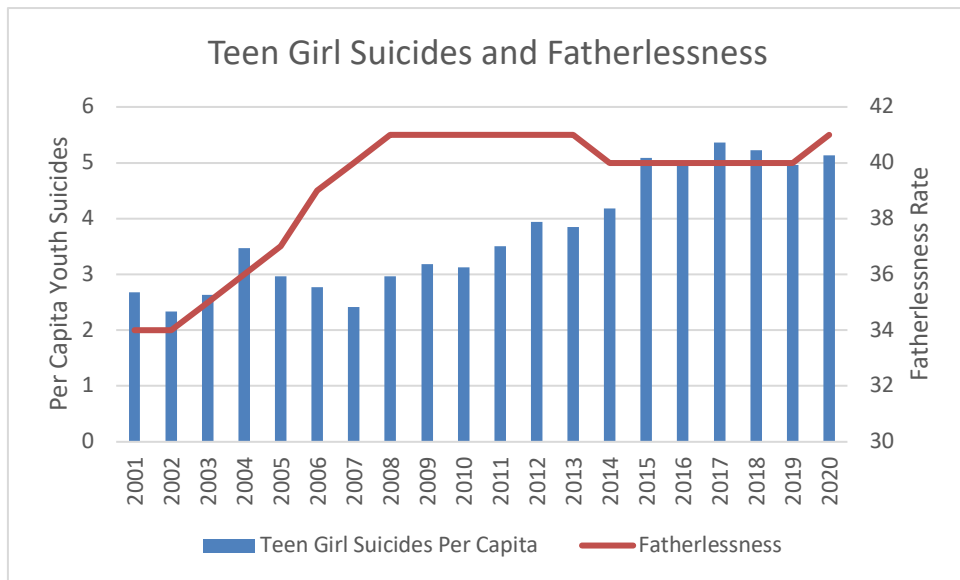
3 16. By contrast, we have no data to suggest changes in teens' use of screens or online  
 4 products and services are predictive of US youth suicide trends. In fact, time series analyses  
 5 have specifically ruled out social media as a cause of youth suicide trends (Padmanathan, P.,  
 6 Bould, H., Winstone, L., Moran, P., & Gunnell, D. (2020). Social media use, economic recession  
 7 and income inequality in relation to trends in youth suicide in high-income countries: A time  
 8 trends analysis. *Journal of Affective Disorders*, 275, 58–65. [https://doi-](https://doi-org.stetson.idm.oclc.org/10.1016/j.jad.2020.05.057)  
 9 [org.stetson.idm.oclc.org/10.1016/j.jad.2020.05.057](https://doi-org.stetson.idm.oclc.org/10.1016/j.jad.2020.05.057)). Changes in youth screen use do not appear  
 10 to have affected youth mental health on a global scale (Vuorre, M., Orben, A., & Przybylski,  
 11 A.K. (2021). There is no evidence that associations between adolescents' digital technology  
 12 engagement and mental health problems have increased. *Clinical Psychological Science*, 9 (5),  
 13 823-835. <https://doi.org/10.1177/2167702621994549>.)

14 17. Advocates for the belief that use of online media has driven changes in US teens'  
 15 suicide or mental health use only vague goalposts to describe when this may have occurred.  
 16 Social media initially became available in roughly 2004 with Facebook, with smartphones  
 17 becoming available around 2009, etc. We are led to believe that *some* change in youth screen  
 18 use during that time is responsible for *any* change in youth mental health during that same time  
 19 period from 2004-2024. However, with no clear guidelines for evidence, *any* change in youth  
 20 wellness between 2004 through the present could have been attributed to changes in technology.  
 21 In other words, rises in youth suicide which began in the early 2010s has been attributed to social  
 22 media, but had youth suicides increased in 2004, or 2009, or 2019 or 2024, the same argument  
 23 could have been made. This lacks any scientific rigor and amounts to post-hoc reasoning. It is  
 24 worth noting that similar arguments were once made both by politicians (including the Surgeon  
 25 General) and scholars about movie and television violence and violent crime, and these proved to  
 26 be false once violent crime began to plummet in frequency in the 1990s (Markey, P. M., French,  
 27 J. E., & Markey, C. N. (2015). Violent movies and severe acts of violence: Sensationalism versus  
 28 science. *Human Communication Research*, 41(2), 155–173. <https://doi->

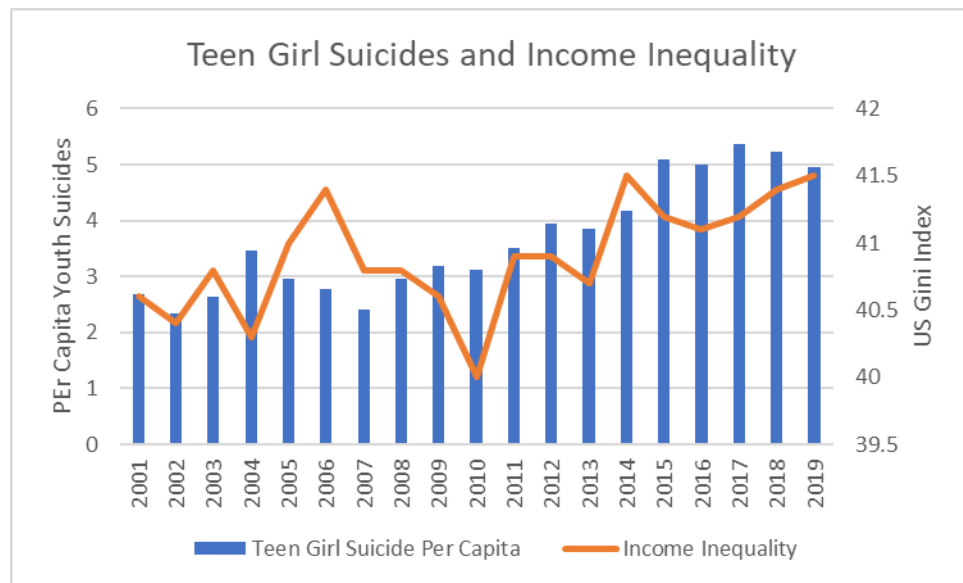
1 org.stetson.idm.oclc.org/10.1111/hcre.12046). This represents, overall, a very poor standard of  
 2 evidence on which to base public policy.

3 18. People might reasonably ask what other factors in US society might explain youth  
 4 mental health suicide increases. As noted before some data suggest that reporting standards  
 5 changes may be responsible for some data such as hospital reported self-injuries (Corredor-  
 6 Waldon & Currie, *supra* p. 6.). Further Shrier (*supra* p. 6) has offered an explosion of a  
 7 therapeutic industry both in K12 education and in the general public as a potential explanation.  
 8 Both of these occurred within the relevant timeframe. Other changes occurring within US  
 9 society in a similar timeframe are myriad and, tragically, in our focus on social media and other  
 10 online products and services, many have been poorly explored. I offer two examples, both of  
 11 which hold up in time-series analyses, suggesting more than mere ecological fallacies.

12 19. For instance, fatherlessness as indicated by births to unwed mothers (data  
 13 provided by kidscount.org) is associated strongly with youth suicide.

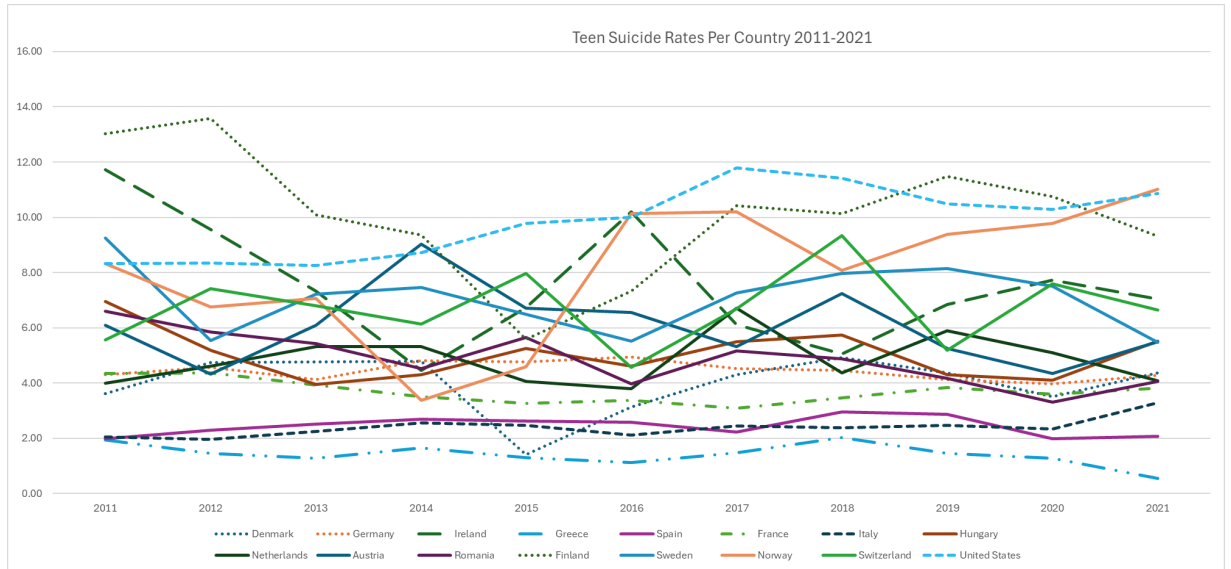


20. 20. So too is income inequality related to youth suicide (a finding also supported by  
 24 Padmanathan et al., *supra* p. 9.).

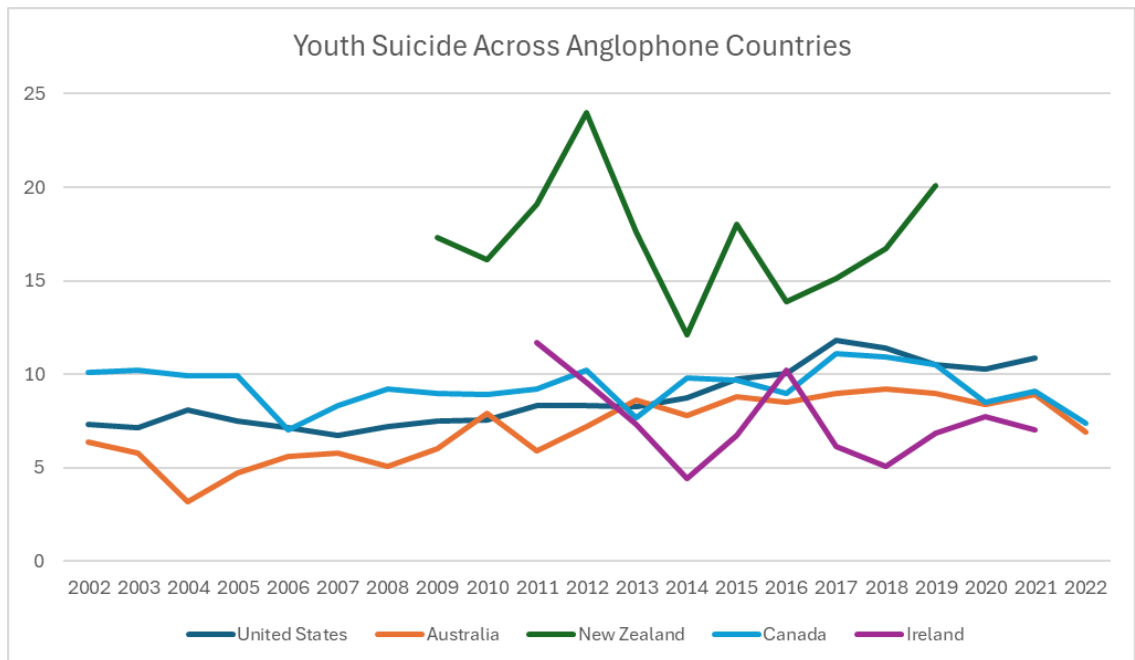


21. Other studies have pointed toward other factors such as a decline in childhood independent activities as a source of youth mental illness (Gray et al., (2023). Decline in independent activity as a cause of decline in children’s mental well-being: Summary of the evidence. *Journal of Pediatrics*, 260, 113352). Opportunities for autonomous, reasonably unsupervised play tend to be associated with healthier child development (van der Kaap-Deeder, J., Vansteenkiste, M., Soenens, B., & Mabbe, E. (2017). Children’s daily well-being: The role of mothers’, teachers’, and siblings’ autonomy support and psychological control. *Developmental Psychology*, 53(2), 237–251. <https://doi-org.stetson.idm.oclc.org/10.1037/dev0000218>), although the trend in parenting in recent decades has been toward risk-aversion, and the suppression of autonomy. “Helicopter parenting” is generally correlated with worse mental health outcomes for youth, though more longitudinal research would be welcome (Vigdal, J.S., & Brønnick, K.K. (2022). A Systematic Review of “Helicopter Parenting” and Its Relationship With Anxiety and Depression. *Frontiers in Psychology*, 13.) This suggests a larger issue with shifting parenting practices, often motivated by shame, guilt and heightened perception of environmental risk, that may be impacting youth mental health in the US in a way that has nothing to do with social media. There are many other potential variables and, undoubtedly, no single explanation is sufficient. But in our rush to judge online products and services like social media, this is causing harm by distracting policy makers from other, better supported risk factors for youth mental health issues, many of which originate from struggling families.

22. It is worth also looking at cross-national data on youth suicide. Were online products and services to blame for youth mental health/suicides, we would expect to see similar youth suicide trends in other high technology adopting countries. But according to official statistics (e.g., Eurostat) on violent deaths, this does not appear to be the case. For example, across European countries, though there is between-country variance, the overall trend in youth suicides has been for a slight *reduction* in youth suicide in recent decades.



23. Similarly for Anglophone countries (Ireland, Australia, Canada, etc.), there is no trend in youth suicides that would indicate a consistent cross-national trend in youth suicides:



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24. Here we can note the rising US rate (this data does not include the 2022 decline reported by the CDC). Teen suicides in New Zealand are particularly high but show no trend. Overall, across nations, there is no consistent trend in youth suicide. UK data provided by the Royal College of Pediatricians and Child Health ((2021), *State of Child Health*. Retrieved from: <https://stateofchildhealth.rcpch.ac.uk/evidence/mental-health/suicide/>) report a decline in youth suicides through 2018 when reporting standards changed making further tracking of data confounded.

25. In conclusion, data within US society and cross-nationally do not support either that there is a consistent trend in youth mental health cross-nationally, nor that the specific issue regarding mental health in the US is limited to teens, nor due to online products and services. No good data is on offer to suggest that societal use of online products and services like social media is well-associated with teen suicide trends, and what good data is available, if anything, suggests that social media is a red herring. By contrast, the data we have suggests that youth mental health and suicide is linked to systemic issues within struggling families which are also affecting youth's parents. Rather than indulging yet another media moral panic, it would be more fruitful to examine real family systems risk factors for mental health problems across generations.

**Experimental Studies: Is There Evidence for Causality?**

26. Experimental studies of social media effects typically randomize participants (most often young adults) to either restrict their social media use for some period of time, or to continue using social media as normal. Typically, both before and after the allotted time (some studies may only do so after), participants are asked to rate their own mental health. Such studies have an obvious weakness in that it is fairly obvious to participants what the hypotheses of the study are. When this occurs, participants are likely to report their behavior closer to what they think they experimenters want and, as such, give responses that do not indicate their true feelings or behavior. This obviously limits the degree to which studies are informative.

27. Nonetheless, the results of individual studies vary widely. Some suggest that restricting online media use may help mental health, others find no effect, and some find that

1 restricting social media is detrimental to mental health. A recent meta-analysis of experimental  
2 studies concluded that, across studies, they provided no evidence for the belief that restricting  
3 social media improves mental health (Ferguson, C.J. (in press). Do social media experiments  
4 prove a link with mental health: A methodological and meta-analytic review. *Psychology of*  
5 *Popular Media*.) Effects were higher in studies where researchers failed to note prior  
6 inconsistencies in the literature (a phenomenon called citation bias), which can indicate  
7 researcher bias. This means that, in some studies, researcher bias against social media resulted in  
8 what were likely artificially inflated results.

9 28. Critics of online media also regularly fail to acknowledge many studies that did  
10 not conclude social media restrictions improved mental health (e.g., Przybylski, A.K., Nguyen,  
11 Tv.T., Law, W. *et al.* (2021). Does Taking a Short Break from Social Media Have a Positive  
12 Effect on Well-being? Evidence from Three Preregistered Field Experiments. *Journal of*  
13 *Technology and Behavioral Sciences*. 6, 507–514. <https://doi.org/10.1007/s41347-020-00189-w>;  
14 Mitev, K., Weinstein, N., Karabeliova, S., Nguyen, T., Law, W., & Przybylski, A. (2021). Social  
15 Media Use Only Helps, and Does Not Harm, Daily Interactions and Well-Being. *Technology,*  
16 *Mind, and Behavior*, 2(1). <https://doi.org/10.1037/tmb0000033>).

17 29. Overall, methodological quality of studies was quite poor, few used open or  
18 transparent research practices, and results of some studies are also often misrepresented,  
19 sometimes by the study authors themselves. For example, the study Allcott et al., (Allcott, H.,  
20 Braghieri, L., Eichmeyer, S., & Gentzkow, M. (2020). The Welfare Effects of Social  
21 Media. *American Economic Review*, 110 (3), 629-76.), which is cited in both the U.S. Surgeon  
22 General’s Advisory and the Royal College of Psychiatrists’ study, concluded that reducing social  
23 media time improved wellness. However, the magnitude of effect was a miniscule .09 standard  
24 deviation units, with .00 being no effect at all. This is important because standard deviation units  
25 below .21 are unreliable, often due to methodological noise (Ferguson, C.J., & Heene, M.  
26 (2021). Providing a lower-bound estimate for psychology’s “crud factor”: The case of  
27 aggression. *Professional Psychology: Research and Practice*, 52, 620-626.) An effect of such  
28 small magnitude is simply too small to reliably distinguish from methodological noise. Even if

1 that were not the case, such an effect would account for less than 1% of the variance in mental  
2 health.

3 30. This is a wide problem for social science where, too often, noise results are  
4 misinterpreted as evidence for a hypothesis, when they should not be. Put simply, the Allcott et  
5 al. study should never be interpreted as evidence that reducing social media time improves  
6 mental health. Unfortunately, it is a statistical quirk that noise outcomes can become  
7 “statistically significant” when sample sizes are large. (as was the case for Allcott et al.) Too  
8 few scholars carefully note this problem in social science and adjust their interpretations  
9 appropriately.

10 31. Other studies are also more complicated than often indicated. For instance, take  
11 one study by Lepp and Barkley (Lepp, A., & Barkley, J. E. (2023). The experimental effect of  
12 social media use, treadmill walking, studying, and a control condition on positive and negative  
13 affect in college students. *Current Psychology*, 42, 26331–26340.) Although it is true that this  
14 experiment (which, like most, is limited by its hypotheses being overly obvious to participants,  
15 which may have caused them to artificially alter their behavior to please the experimenters, a  
16 common phenomenon) found people who exercised were happier than those who used social  
17 media, those who used social media were happier than those who did not use social media (the  
18 actual control group). It is a very different question to ask whether exercise makes people  
19 happier than social media, than to ask whether social media causes harm relative to not using  
20 social media. Lepp and Barkley provide no good evidence for the latter concern.

21 32. In conclusion to this section, experimental studies are severely limited by major  
22 methodological weaknesses likely to create false positive results. Further, some studies evidence  
23 clear researcher bias as indicated by citation bias. Nonetheless, as a group, they do not provide  
24 evidence for causal impacts of online media use on mental health.

### 25 **Correlational/Longitudinal Studies**

26 33. If the evidence for causal effects is poor, we might ask whether at least there is  
27 correlation between online media use and youth mental health. Of course, correlational evidence  
28 is not evidence for causal effects or harm. Even if a correlation did exist, for instance, it could be

1 that youth who are more distressed use online products and services like social media either to  
2 distract themselves or seek information or support regarding their mental illness.

3 34. There are a great number of correlational studies, many of which are not done  
4 with youth, although a fair number are. Studies are generally inconsistent in results, with some  
5 finding correlations, some finding no correlations and some even finding that social media use  
6 predicts good outcomes.

7 35. Even meta-analyses of correlational studies come to different conclusions. For  
8 example, one recent meta-analysis concluded that social media use did not predict mental health  
9 once other factors were controlled (Yang, Q., & Feng, Y. (2024). Relationships between social  
10 Networking Site (SNS) use and subjective well-being---- A meta-analysis and meta-analytic  
11 structural equation model, *Heliyon*, <https://doi.org/10.1016/j.heliyon.2024.e32463>). Similarly, a  
12 recent meta-analysis which focused specifically on youth mental health outcomes concluded that  
13 there was no predictive relationship between social media use and youth mental health  
14 (Ferguson, C.J., Kaye, L.K., Branley-Bell, D., & Markey, P. (in press). There is no evidence that  
15 time spent on social media is correlated with adolescent mental health problems: Findings from a  
16 meta-analysis. *Professional Psychology: Research and Practice*.) This fits with some of the  
17 best longitudinal studies of youth wellness which generally find no to weak associations between  
18 social media use and teen mental health (e.g., Heffer, T., Good, M., Daly, O., MacDonell, E., &  
19 Willoughby, T. (2019). The longitudinal association between social-media use and depressive  
20 symptoms among adolescents and young adults: An empirical reply to Twenge et al  
21 (2018). *Clinical Psychological Science*, 7(3), 462–470. [https://doi-](https://doi-org.stetson.idm.oclc.org/10.1177/2167702618812727)  
22 [org.stetson.idm.oclc.org/10.1177/2167702618812727](https://doi-org.stetson.idm.oclc.org/10.1177/2167702618812727); Jensen, M., George, M. J., Russell, M. R.,  
23 & Odgers, C. L. (2019). Young adolescents' digital technology use and mental health symptoms:  
24 Little evidence of longitudinal or daily linkages. *Clinical Psychological Science*, 7(6), 1416–  
25 1433. <https://doi-org.stetson.idm.oclc.org/10.1177/2167702619859336>).

26 36. It is important to recognize that some studies find that social media use is  
27 associated with *better* mental health outcomes. For instance, one study found that using social  
28 media such as Instagram was associated with decreased loneliness (Pittman, M., & Reich, B.

1 (2016). Social media and loneliness: Why an Instagram picture may be worth more than a  
2 thousand Twitter words. *Computers in Human Behavior*, 62, 155–167. [https://doi-](https://doi-org.stetson.idm.oclc.org/10.1016/j.chb.2016.03.084)  
3 [org.stetson.idm.oclc.org/10.1016/j.chb.2016.03.084](https://doi-org.stetson.idm.oclc.org/10.1016/j.chb.2016.03.084)). Similarly, another study found that  
4 Facebook use was associated with improved life satisfaction (Valenzuela, S., Park, N., & Kee, K.  
5 F. (2009). Is there social capital in a social network site?: Facebook use and college students' life  
6 satisfaction, trust, and participation. *Journal of Computer-Mediated Communication*, 14(4), 875–  
7 901. <https://doi-org.stetson.idm.oclc.org/10.1111/j.1083-6101.2009.01474.x>). The key takeaway  
8 is that there is simply no clear consistency to indicate a correlation between social media use and  
9 mental health. Effects across all studies are generally very weak, whether positive or negative  
10 and the extent to which such studies rely on self-report or may not control adequately for  
11 relevant confounding variables, often do not present state-of-the-art science.

12 37. Effects in meta-analyses may also be miscommunicated in several other ways.  
13 Some meta-analyses may find effects that are very close to zero and well within the level of  
14 effects expected by methodological noise. Yet authors may focus on “statistical significance”.  
15 But almost all meta-analyses produce “statistically significant” effects due to the massive power  
16 of such analyses...even for relationships that are trivial or due to chance. This is, again, one  
17 unfortunate quirk of social science which too many scholars have been slow to recognize.  
18 Further, some meta-analyses may focus on bivariate correlations which do not adequately control  
19 for confounding variables such as biological sex, family stress, prior mental health, etc. This  
20 will inadvertently overestimate the true size of correlations.

21 38. In conclusion, correlational and longitudinal studies vary widely in quality and  
22 outcomes. However, between them the evidence they provide for a relationship between social  
23 media use and mental health remains weak.

### 24 **Potential Benefits of Online Products and Services for Teens**

25 39. During times of moral panic, it is common to view new media or technology as  
26 inherently dangerous and ignore potential benefits. This appears to be reflected in the social  
27 science literature which, overwhelmingly, concerns itself with risks (whether evidence is found  
28 for them or not), rather than potential benefits. However, some evidence does also point to

1 potential benefits for youth on online media. Of course, this evidence should be subjected to the  
2 same scrutiny as that for harms and, at present, I conclude that the evidence here is more “proof  
3 of concept” than definitive.

4 40. One study explains that “many types of content and forms of interaction among  
5 adolescents sharing images of self-harm on social networks may have supportive effects through  
6 recovery-oriented content.” (Vania Martinez, et al., *Social Contagion, Violence, and Suicide*  
7 *Among Adolescents*, CURR OPIN PSYCHIATRY (May 2023), <https://tinyurl.com/ye252na8>).

8 Moreover, social media may be an effective way of communicating health information to teens  
9 (Plaisime, M., et al., (2020). Social media and teens: A needs assessment exploring the potential  
10 role of social media in promoting health. *Social Media and Society*,

11 <https://doi.org/10.1177/2056305119886025>). Youth with chronic health conditions may be able  
12 to use social media to find social connections and support (Daniels, S., & Willard, V. W. (2023).

13 Social media interactions after diagnosis: Social experiences of adolescents and young adults  
14 (aya) with cancer. *Journal of Psychosocial Oncology*. <https://doi->

15 [org.stetson.idm.oclc.org/10.1080/07347332.2023.2249876](https://doi.org/stetson.idm.oclc.org/10.1080/07347332.2023.2249876)). Social media may be of particularly

16 benefit to LGBT youth, who can use it to find connections and support (Berger M.N. et al.,  
17 (2022). Social media use and health and well-being of lesbian, gay, bisexual, transgender, and  
18 queer youth: Systematic review. *Journal of Medical Internet Research*, 24(9), e38449, doi:  
19 10.2196/38449).

20 41. One recent large-scale review found there is evidence for multiple areas of benefit  
21 for teens in using online products and services (Haddock, A., Ward, N., Yu, R., & O'Dea, N.  
22 (2022). Positive effects of digital technology use by adolescents: A scoping review of the  
23 literature. *International Journal Environmental Research in Public Health*, 19(21):14009. doi:  
24 10.3390/ijerph192114009.). For social media specifically, the authors concluded there are  
25 potential benefits related to social communication and reciprocity, information gathering and  
26 creative thinking, and developing real-life relationships. My own personal read is that much of  
27 this evidence remains correlational, has similar weaknesses as with the “harm” literature and  
28

1 should be interpreted with some caution. However, it does provide an important counterpoint to  
2 the current exclusive focus on “harm” to the exclusion of all else.

3 42. A Pew Research Center analysis of survey data found that “[t]eens are more likely  
4 to report positive than negative experiences in their social media use.” (Emily A. Vogels & Risa  
5 Gelles-Watnick, *Teens and social media; Key findings from Pew Research Center surveys*, PEW  
6 RSCH. CTR. (Apr. 24, 2023). Specifically, Pew found that 80% of teens reported “feeling more  
7 connected to what is going on in their friends’ lives,” 71% of teens reported feeling “like they  
8 have a place where they can show their creative side,” and 67% of teens reported feeling “like  
9 they have people who can support them through tough times” on social media. (*Ibid.*)

10 43. Underscoring the benefits minors derive from social media is evidence that  
11 disconnecting adolescents from social media would be even more harmful than heavy social  
12 media use. (Keith N. Hampton et al., *Disconnection More Problematic for Adolescent Self-  
13 Esteem than Heavy Social Media Use: Evidence from Access Inequalities and Restrictive Media  
14 Parenting in Rural America*, SOC. SCI. COMP. REV. 41:2 (Aug. 5, 2022).)

15 44. My point is not that this research on benefits is any more definitive than that on  
16 harms, but rather that any crude policy decisions made in the midst of moral panic may have  
17 more deleterious effects than positive.

### 18 **Moral Panic Theory**

19 45. Both politicians and scholars have a long history of indulging moral panics as  
20 relate to new media and technology. Moral Panic Theory is well-established in the sociological  
21 and criminal justice literature (Cohen, S. (1972). *Folk devils and moral panics*. London:  
22 MacGibbon and Kee.) Put briefly, moral panics occur typically when older adults in society  
23 become concerned about new media or technology that youth are using and ascribe the use of  
24 that media and technology to some social problem, real or imagined. This creates incentives for  
25 news media, politicians and scholars to cater to the moral panic in order to garner news  
26 headlines, votes, and research funding. During times of moral panic, data which supports the  
27 panic may be given far more attention than that which calls it into question. Moral panics tend to  
28 last until the generation of older adults who believe in the panic begin to die. Thus, we can look

1 back on panics over everything from Greek plays, to going to the theater, to books, to the radio,  
2 to television, to comic books, to video games, to rock music, etc., with something akin to  
3 disdain, yet fail to learn from this historical pattern.

4 46. As noted in this declaration, there is a wide gulf between the rhetoric used by  
5 some politicians and scholars in support of the censorship or regulation of online products and  
6 services and the actual research evidence to support such claims. In fact, the evidence is, at best,  
7 weak and inconsistent. Yet many politicians and even scholars fail to report this faithfully. This  
8 does not imply bad faith, merely that such behavior is common to moral panics.

9 47. The US Surgeon General’s Advisory on Social Media and Youth Mental Health,  
10 commonly cited by critics of youth social media use, found that “[s]ocial media can provide  
11 benefits for some youth by providing positive community and connection with others who share  
12 identities, abilities, and interests” and that “[i]t can provide access to important information and  
13 create a space for self-expression.” (Social Media and Youth Mental Health: The U.S. Surgeon  
14 General’s Advisory, U.S. DEP’T OF HEALTH AND HUMAN SERV., 6 (2023).) According to the  
15 Surgeon General, this is especially true for “youth who are often marginalized, including racial,  
16 ethnic, and sexual and gender minorities.” (*Ibid.*) In fact, “[s]tudies have shown that social  
17 media may support the mental health and well-being of lesbian, gay, bisexual, asexual,  
18 transgender, queer, intersex and other youths by enabling peer connection, identity development  
19 and management, and social support.” (*Ibid.*) And unsurprisingly, the Advisory cautions that  
20 “[d]espite this widespread use among children and adolescents, robust independent safety  
21 analyses on the impact of social media on youth have not yet been conducted.” (*Id.* at 4.)

22 48. Moreover, the Surgeon General has been something of an engine of moral panics,  
23 having promoted moral panics in the past over television, video games and other forms of media.  
24 Most notably, during the early 1980s, then-Surgeon General C. Everett Koop described video  
25 games as addictive, dangerous both physically and mentally and hazardous “body and soul” (see  
26 Associated Press. (1982). Around the Nation; Surgeon General Sees Danger in Video Games.  
27 *New York Times*. Retrieved from: [https://www.nytimes.com/1982/11/10/us/around-the-nation-  
28 surgeon-general-sees-danger-in-video-games.html](https://www.nytimes.com/1982/11/10/us/around-the-nation-surgeon-general-sees-danger-in-video-games.html)). It is important to recognize that he was

1 discussing video games such as *Pac Man* or *Space Invaders* which no one today believes to be  
2 dangerous in the slightest. Interestingly, in his advisory on social media, the US Surgeon  
3 General both acknowledges that social media may have benefits for many youths, but also that  
4 there are significant gaps in the research literature. Nonetheless, the Advisory appears to lean  
5 into moral panic language with classic reversed burden of proof stating “Nearly every teenager in  
6 America uses social media, and yet we do not have enough evidence to conclude that it is  
7 sufficiently safe for them.” This framing that the harm hypothesis is *true* until it is proven false  
8 is exactly the inverse of how science actually works. Nor does the Surgeon General provide any  
9 guidelines for what they would consider evidence social media is “safe” despite significant  
10 evidence that social media is not harmful. Is there a “perfect” study the Surgeon General would  
11 consider definitive? Is there a certain ratio of null to “statistically significant” studies they would  
12 find convincing? Is there a certain minimal effect size below which we could safely conclude  
13 any social media effects are trivial? Without such clear scientific guidelines any public  
14 statements are politicized and unfalsifiable rather than helpful.

### 15 **Conclusions**

16 49. To summarize:

17 1) There is no clear evidence that there is an international trend in mental health  
18 impacting youth whether due to access to online products and services or due to any other cause  
19 (see supra paragraphs 10-25).

20 2) To the extent that a mental health crisis exists specifically in the US, this is not  
21 isolated in teens, but appears to be inter-generational, impacting less-tech adopting older adults  
22 more than teens (see supra paragraphs 12-13).

23 3) Mental health in older generations appears to be deeply entwined with mental  
24 health in younger generations likely due both to parental suicide, as well as parental emotional  
25 and physical abuse (see supra paragraphs 14-15).

26 4) There is no good evidence that restricting online media time is a panacea for  
27 mental health (see supra paragraphs 17, 27-33).

28

