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Editorial

Smartphone bans in schools remain unproven

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In recent years, interest in banning smartphones in schools has increased. This has become a policy in several US states and municipalities, with other states considering them. The UK continues to debate such policies. Other countries ranging from France to China have also implemented bans on smartphones in schools. However, do such bans work (i.e., improve grades, mental health, reduce bullying, etc.)?

In truth, such policies have been put into place despite little evidence that such bans promote student wellbeing or grades. Indeed, several recent reviews of research in this area have shown that evidence supporting the efficacy of such bans is limited [1,2]. Recently, the most comprehensive examination of such policies at schools in the UK revealed that they have little relationship with student behavior, grades, or mental health, even when analyses were limited to the most restrictive schools [3]. An earlier study in Norway revealed only mixed and weak evidence in support of bans [4]. Unfortunately, the wide proliferation of smartphone bans without evidence may make true randomized-controlled trials unlikely at this juncture, given that it may be increasingly difficult to locate schools systematically that have not been touched by such bans AQ1.

Bans were based on a poor evidence base

Smartphone bans are likely intuitive, because a few teachers, parents, or pediatricians want youth to pay attention to phones rather than teachers. Smartphones, unlike daydreaming or doodling, are very visible reminders to teachers that they are often boring to children. Although it was never clear that smartphones *caused* student distraction as opposed to being a symptom of it, it is not unreasonable purely as a matter of etiquette to restrict their casual use in class. However, as policy, these efforts may distract from real problems that youth face.

It is important to understand whether bans on smartphones are AQ2 based on good evidence, either on smartphones or related technologies such as social media. Both the public debate and many studies overlap smartphones with social media (such as, for instance, tracking social media use via apps on phones). At present, the evidence does not support that the time spent on new technology, such as smartphones or social media, is related to youth sleep [6] or mental health [7,8]. Meta-analyses have suggested that reducing social media time does not improve mental health [9,10]. This was true whether samples were young adults or adolescents.

As demonstrated in Fig. 1, the youth suicide data cross-nationally demonstrated no pattern indicating an increase during the social media/smartphone age. This is consistent with cross-national data demonstrating no increase in the prevalence of mental health diagnoses such as anxiety disorders [11]. Although youth self-reports are often unreliable, a recent Pew research study revealed that more young people feel that social media and smartphones improve their mental health than harm it, with most young people finding it to have little effect [12]. A national study of American youth revealed that those with smartphones fare better or at least not worse in terms of mental

and physical health than those without smartphones do, although how one uses their phone is also important [13]. Some claim that smartphone bans reduce bullying, but, as shown in Fig. 2, on the basis of National Center for Education Statistics data, during the age of smartphones, bullying behaviors in the United States decreased, not increased, even with cyberbullying included in the statistics AQ3.

Fig. 1

Per capita youth suicide rates across the United States, Anglophone countries, and Europe. Data sources are the CDC WISQARS dataset for the US, Eurostat for Europe, including Ireland, New Zealand’s Coroner’s Court, Statistics Canada, and the Australian Institute of Health and Welfare. The graph was created in April 2024. CDC center for disease control and prevention, WISQARS Web-based Injury Statistics Query and Reporting System

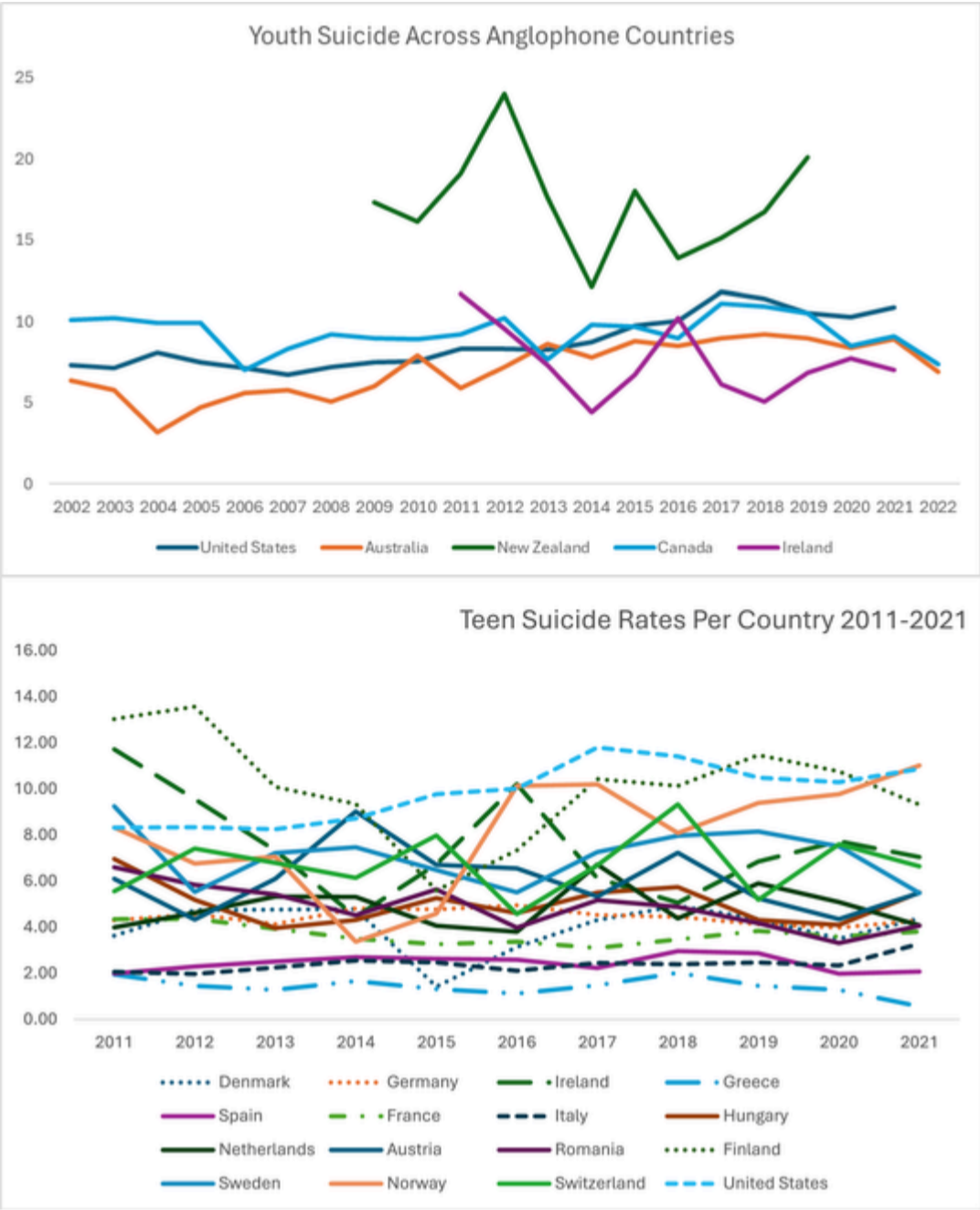
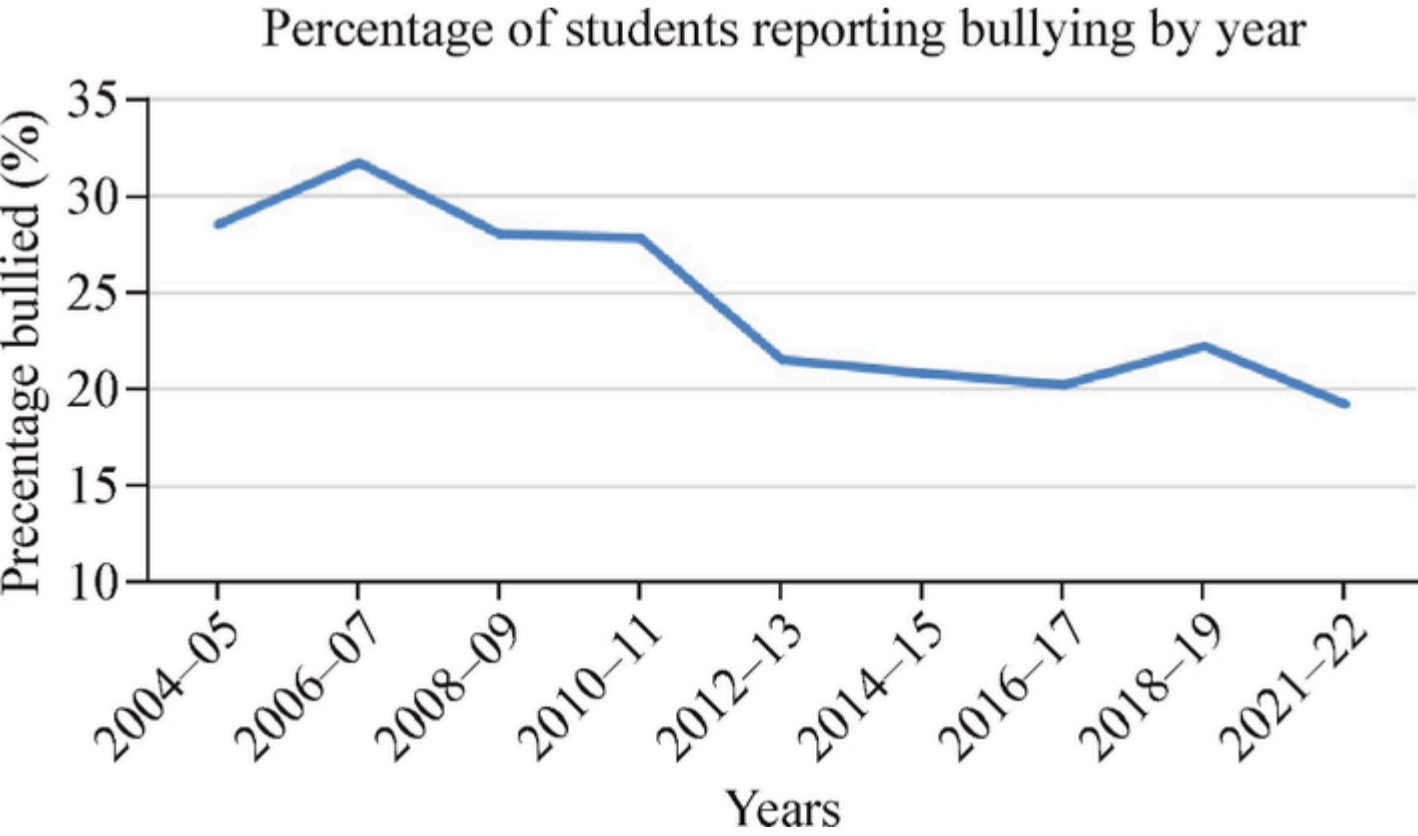


Fig. 2

Per capita bullying rates in the United States by year. The data are from the National Center for Education Statistics



This can be contrasted with data on adverse events in childhood, such as parental abuse, parental incarceration, or parental suicide. According to recent Center for Disease Control and Prevention (CDC) reports, the use of social media and smartphones was only weakly (i.e., at levels likely explained by statistical noise) associated with youth self-reported suicidality [14]. However, correlations between

adverse childhood events and youth suicidality were enormous, possibly explaining close to 25% of the variance in some cases (social media explained effectively nearly 0% of the variance) [15]. Unfortunately, the CDC failed to faithfully report this distinction in effect sizes, adding to miscommunication in this realm. As to the reason, I can only speculate, though difficulty faithfully articulating effect sizes is endemic to social sciences with far too much weight still put on “statistical significance” [22]. This appears to have been true for the CDC reports. It is important for scholars to become more sophisticated in the interpretation of effect sizes and rely less on *P* values **AQ4**.

Lessons from past moral panics

The history of technology- and media-based moral panics is well established in the scholarly literature [16,17]. Such periods are typically identifiable by certain patterns. Typically, broad claims of harmful causal impacts are made before evidence is collected. Politicians and advocates call for action before the effects of policies are investigated. Ad hominem attacks are made against those skeptical of the panic’s claims. The impacts of media or technology are commonly compared with dramatic influences, such as cigarette smoking or lead in drinking water [18]. We can see here an important distinction between moral panic and real concerns. In the case of lead pipes, for example, the science came first, then resulting in sensible policy efforts, typically without any moral outrage. In the case of moral panics, the concern typically predates the evidence, which exaggerates its consistency, with moral condemnation and personal attacks against those who question the panic. Typically, there was little strong and consistent correlational evidence that policy was needed. Some may argue for the precautionary principle, but the history of moral panics argues against this, particularly to the degree they can do real harm in distracting society from real issues facing youth, such as gun control in the case of violent video games, even if the threats to free speech alone were not considered. Furthermore, at present, the issue is not that we do not have evidence but rather that these policies do not work and may cause harm via increased suspensions for youth.

Very often, people can be heard that they do not need science to tell them that something is harmful. Instead, they may turn to fearmongering books or pop-culture figures such as talk-show hosts for information. We have seen this with the degree to which the pop book *Anxious Generation* and even the fictional Netflix show *Adolescence* have influenced policy decisions. Politicians such as Virginia Governor Youngkin have directly cited *Anxious Generation* as a motivation for smartphone bans [19]. The Prime Minister of the UK has made *Adolescence* free in all UK secondary schools, so that as many teens as possible can see it during a time when the UK has been debating national school smartphone bans [20]. Reliance on such unreliable sources should raise a red flag.

The problem with moral panics is that they often distract society from real concerns. Fears such as violent video games distracted policy-makers from gun control in the US for decades; thus, fear of smartphones distracts policy-makers from issues, such as adverse events in families or peer bullying, which truly predict serious youth mental health issues [15]. Put simply, indulgence in moral panics has the capacity to cost real lives.

Recommendations for pediatricians

Smartphone bans do not appear to work

To the extent that smartphone bans may result in increased discipline, including suspensions for youth, smartphone bans may do more harm than good for youth, as suspensions are associated with negative outcomes for youth [21]. Pediatricians would do well to speak out against them until more evidence is available.

Be wary of effect sizes

Significant miscommunication has occurred in this area because of two issues. First, too many studies rely on *P* values to make binary decisions about hypothesis support. Second, too many studies fail to consider whether a reported effect size is large enough to be a true effect or merely the product of unreliable responding, hypothesis guessing and other statistical noise that can create false-positive results, particularly in large sample studies. Taken together, this means that there are many false positives across research studies. This can be spotted in several ways:

- (1) This statistical issue is more common in studies with larger sample sizes. When reading a study with a large sample, one must already consider that any results may be false positives and consider the remaining three points.
- (2) For large sample studies, *P* values should be ignored. *P* values account for only sampling error, not the kind of statistical noise that can create small effect size false positives, particularly in large sample studies. Just because study authors state they found an effect does not mean they actually did if that decision is based on *P* values.
- (3) Does the relationship control for third variables such as adverse childhood events, bullying, neurotic personality, or prior mental health? An effect that does not will have a high probability of false-positive results.
- (4) Effect sizes below $r = 0.10$ or odds ratio (OR) = 1.44 have a high probability of being statistical noise [22]. These should never be considered hypothesis supportive. Furthermore, I generally recommend a cutoff of $r = 0.20$ or OR = 2.0 before an effect is likely to be clinically significant.

Examining the literature review of a study can also be a warning sign. Authors who only cite studies supporting their own view may be particularly prone to researcher expectancy effects that can create false-positive results.

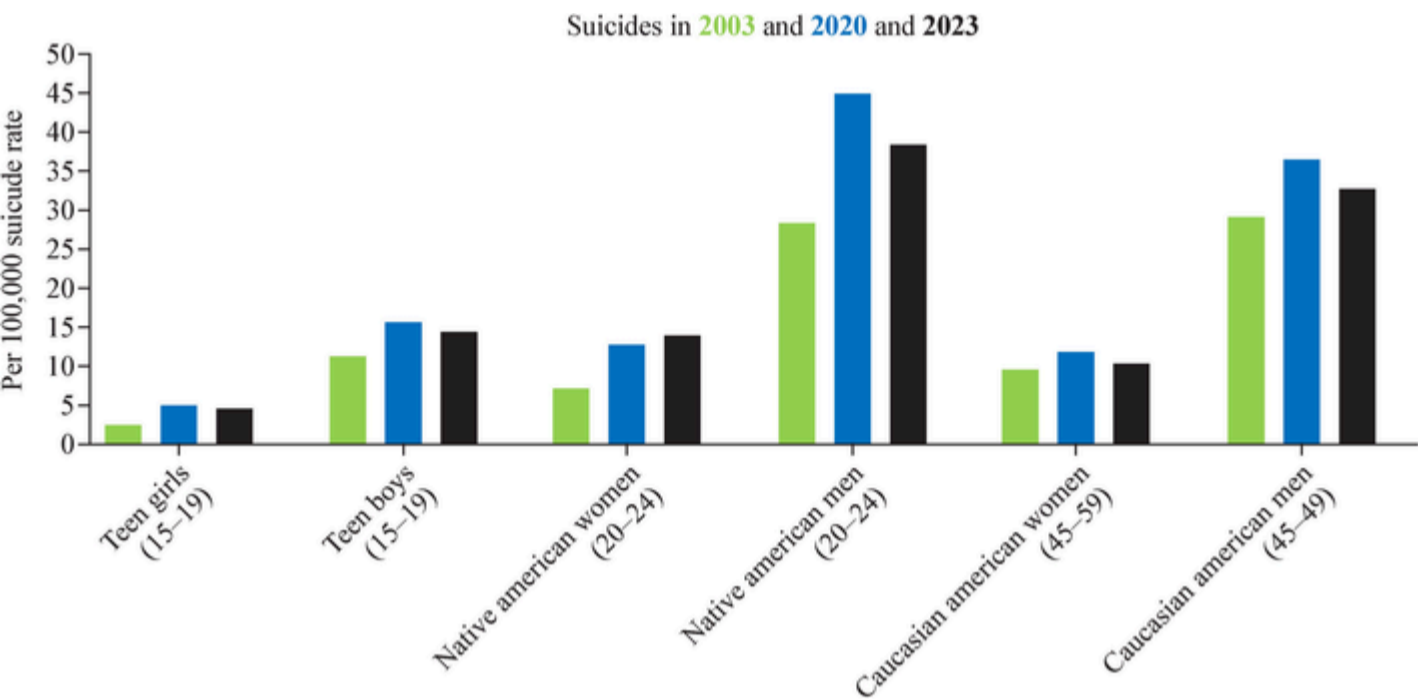
Furthermore, meta-analyses should be held with particular suspicion. Too many meta-analyses rely on bivariate correlations, rather than controlled effect sizes, or, even more remarkably, still rely on *P* values. Both are common but bad practices that artificially inflate confidence in weak results.

Advocate for families not against technology

The CDC and other data make clear that the problems youth face primarily originate from within their own families, not from technology. Unfortunately, parents generally do not want to hear that their own problems trickle down to their youth, particularly when a technology moral panic offers a more palatable explanation. However, we can see from patterns in suicide in the US over the past two decades that the rates of suicide among young people and their parents tend to rise and fall in combination. These data were retrieved from the CDC’s Web-based Injury Statistics Query and Reporting System (WISQARS) database and are presented in Fig. 3. Interestingly, with respect to all the concerns about youth suicide, the number of middle-aged adults who commit suicide (particularly Caucasians) is far greater and experiences steeper increases than do teenagers. The good news is that the number of suicides among teens has decreased in recent years, beginning before the widespread implementation of smartphone bans or social media bans, and with no evidence teens have reduced their smartphone or social media time.

Fig. 3

Suicides among teens, young Native American men, and middle-aged adults. These data were retrieved from the CDC’s WISQARS. CDC center for disease control and prevention, WISQARS Web-based Injury Statistics Query and Reporting System



Advocate for media literacy, not bans

There is little evidence that bans help kids. In contrast, teaching young people healthy ways to manage their phone and social media time is likely to be far more productive. Media literacy programs could focus on specific aspects of social media hygiene, such as privacy, scam awareness, setting notifications, avoiding foolish arguments, etc.

Beware false consensus claims

During moral panics, it is common for scholars on the scare/concern side to attempt to claim a consensus, in most cases simply excluding scholars who disagree with them (for example [23,24]). Most often, these papers succeed simply in causing acrimony when no such consensus exists [25,26]. Not surprisingly, such a paper has already been reproduced on social media [27]. Predictably, there has been controversy, noting that among the planning committees for the paper were individuals with potential financial conflicts of interest and a general failure to solicit opinions from more skeptical scholars. Even some authors on that paper have expressed concerns about the process and how it was presented [28]. Thus, such a paper represents no consensus at all, and it is unclear what motivates such claims by some scholars.

Don't be seduced by fearmongering

Most scary claims about media and technology prove to be false [29]. Fearmongering books such as *Anxious Generation* and fictional television shows such as *Adolescence* should never be used as the basis for policy at any time, anywhere, under any circumstances.

Smartphone bans were implemented as a means of improving youth grades, behavior, and mental health. Current evidence suggests that they do not work. Furthermore, to the extent that they increase student suspensions or distract from real causes of youth problems, they may do more harm than good. The most likely benefit from smartphone bans is that they reduce reminders to teachers that kids often find them boring. There should be a moratorium on further smartphone bans until their impacts, whether positive or negative, are better understood.

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