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Overweight, Sleep-Deprived, and Distracted: Preventing the Worst of the Social Media Zeitgeist

Beginning with the dot-com boom in the late 1990s, social media has seeped and surged into almost every waking hour of our lives. A mere fifteen years ago, less than half of the population of the United States used the internet and only 2.5% of the population even had a fixed internet connection at home (O'Keeffe 800). Fast forward a decade and a half, and now nearly 75% of the United States population has access to the internet in the palm of their hands (Agarwal, et al 38). The internet is connected to our kitchen appliances, our cars, and even our watches. A growing proportion of internet users do not know what it is like to live without the internet – these are the so-called Digital Natives. One poll found that 22% of teenagers logged into social media more than 10 times per day and children aged 8 to 18 used media, on average, for 7 hours and 38 minutes every day (Choudhury 198). The Adolescent Health Collaborative references research establishing the percentage of online teens that use social media at 73% (Carroll 1).

With social media flooding so many of their experiences, many youth today will experience their most important developmental stages under the influence of social media (Barth 201). The heavy use of social media use by adolescents negatively affects their physical, social and cognitive development in significant and fundamental ways. In order to counter these negative effects, federal and state governments should shift health education to focus on the

appropriate usages and limits of social media. In addition, social media providers should proactively provide usage tools and settings in order to avoid the risk of future "blunt-force" regulation by governments to protect adolescent users.

Physical health is the foundation for overall well-being and especially our mental health. Many researchers agree that extended media use is partly to blame for physical epidemics in youth such as obesity and decreased sleep (Barth 206, Agarwal et el 41, Vossen, et el 15). A study testing the effects of social media usage on sleep patterns showed a negative correlation between screen media usage and the duration of sleep in teenagers (Peiró-Velert, et al 3). The more teenagers use media, the more problems they had in falling asleep and in getting sufficient sleep for overall growth and health. The study developed its findings from a sample of 3,000 Spanish adolescents, and took survey information as part of a larger study, which covered topics about media use, academic performance, and sleep statistics. In addition to the negative consequences of reduced sleep, some studies report a causal positive correlation between social media use and obesity among children along due to the inverse relationship between media use and physical exercise (Agarwal 41).

There are, admittedly, health benefits to social media use. Adolescents have easy and relatively anonymous access to accurate online information about health concerns (O'Keeffe 801). Along with access to information, support networks and health contact information are also easily accessible. According to the Adolescent Health Collaborative, 31% of teens are getting health, dieting, or physical fitness information from the internet (Carroll 1).

In addition to the negative effects on physical activity, Overuse of media has been shown to have negative effects on psychological health. A study was conducted to test if an increase in social media use among adolescence would indirectly cause increased body dissatisfaction (de

Vries, et al 9). Using a two wave panel survey conducted by the Netherlands Youth Institute, the study found that they hypothesis was not supported due to the effect of peer appearance related feedback being not significant (de Vries 9). One study found that media can amplify emotions which can help youth gain greater emotional intelligence. In contrast, however, Barth found that youth today are having trouble using verbal and intellectual skills along with the related psychological insight important to managing emotional and social development (Barth 203). The findings from Barth's study relate to the results of the studies from de Vries and Lee. Social media is not immune from negative offline behaviors including bullying and clique-forming (O'Keeffe 800). Cyberbullying is deliberate use of digital media to communicate false, embarrassing, or hostile information, and is the most common online risk (O'Keefe 801).

Most importantly, adolescent growth also includes the development of fundamental executive functions and cognitive control in the brain. Scientists fear that over-usage of media from early childhood through adolescence has a powerful impact on the brain. The use of this media falls into "experience dependent developmental neuroplasticity," which can have an effect on cognitive function later in life (Choudhury 198). This developmental neuroplasticity allows humans to filter distractions, to switch between tasks easily, to exhibit behavioral control, and to feel and project important emotions such as empathy. Using a series of surveys and a set of individual cognitive tasks, researchers were able to determine the effects of media multitasking on cognitive function and development. Media multitaskers were found to perform worse in task switching tests and had underdeveloped executive functions of working memory and inhibition (Baumgartner, et al 1136). The media multitasking that causes these deficiencies is defined as using two forms of media simultaneously (Baumgartner, et al 1121). According to another study, more than 25% of adolescents perform media multitasking (Baumgartner, et al 1121).

Some studies research the effects of violent media usage and cognition in older adolescents. The result of one study supported suppressed activation of the amygdala in the brain during violent periods of media use when compared to non-violent periods (Choudhury 203). The amygdala plays a key role in feeling certain emotions, which develops during adolescents. The suppressing of the amygdala, according to the study, may lead to increased aggression later in life. Not all social media is violent. The indication is that if media is violet, the harm may be more profound if it is conveyed using social media applications.

Taken together, the results of these studies show a mixture of positive and negative effects of social media on adolescent development. There are clear benefits to physical health, socialization, and mental development that social media can support. Perhaps the strongest advantage is the value social media has in allowing teens who may be marginalized to find friends with common concerns and interests. Social media can also have clear and serious negative impacts on adolescents' social, mental, and physical development. Perhaps the most serious is the negative effects social media has on the functioning of the brain.

In the face of both strong advantages and likely harms of social media, the best policy choices for governments, for providers, for parents and for the users of social media are not self-evident. Limiting the analysis to the United States, the starting point for any policy prescription is the law. In June 2015, the Supreme Court ruled 8-1 in favor of free speech on social media in a case involving the posting of threats on Facebook (Elonis v. United States). Although the interpretation of First Amendment protections in the context of social media and the internet may take several years or more to fully play out, history suggests that the citizens of the U.S. will retain their freedom to communicate freely regardless of the media.

Given the constraints against immediately enacting legislation, the role government can play to influence the use of social media by adolescents is two-fold. Government can and should continue to fund research to understand the changing nature of the effects of social media on teens. In addition to research, the federal government and state governments can establish curriculum standards that include the latest findings regarding technology and social media. The Centers for Disease Control and Prevention has begun to set this direction with inclusion of technology and media in Standard 2 of the National Health Education Standards (Healthy Schools, Centers for Disease Control). The standard requires students to be able to analyze the influence of technology on personal and family health. However, the standards emphasize the general influence of technology as well as risks like cyberbullying. Equally important but not well covered in the recommended curriculum is education about the negative cognitive effects of social media. The Centers for Disease Control should increase the depth of research and publication regarding the negative cognitive effects of social media.

State governments set content standards for secondary education and are influenced in part by the policies of the federal government. The Louisiana Health Education Content Standards offers one example of guidance and requirements that the states provide to individual school districts (Picard 5). The Louisiana Department of Education identifies eight components of a coordinated school health program: health education; physical education; health services; nutrition services; counseling, psychological, and social services; healthy school environment; health promotion for staff; and family and community involvement. New media and technology are referenced in some of these areas, but the potential negative impact on the cognitive health and development of adolescents is not adequately addressed. A more effective curriculum would start with the nature of the adolescent digital environment and its implications across all eight of

the domains. In addition, given how fundamental cognitive health is to successful participation in

the economy, barriers to cognitive development, including the excessive use of technology and

social media, could replace the physical education component. The original curriculum

developers or school districts might oppose this new curriculum. Developing the materials and

making the changes requires resources and time and likely the elimination of other parts of the

curriculum.

Because this type of media is new, it is not uncommon for parents of children and

adolescents to be unaware of it. Similar situations can be seen throughout history. For example,

100 years ago it was just becoming well known that smoking was harmful. The Children's Act

banned the sale of tobacco to children under 16 in 1908 but it was not until 1965 that the

government started to regulate advertising related to smoking. Congress finally passed the

Comprehensive Smoking Education Act in 1984, requiring cigarette companies to post the

Surgeon General's warning on cigarette packs. This Act was more than seventy-five years after

Congress started to become aware of the problem of smoking and youth (Jacobs). If parents are

informed about the dangers of media overuse, they can begin to effectively teach their children.

Informing parents through the school system is the most effective way to inform the broad

demographic range of adults. Execution of the information-providing program could be done

through parents' nights at high schools and through other means of communication, including

social media.

Along the lines of using social media to highlight the dangers to the adolescent mind of

too much media, state governments could use new media itself to communicate the problems

with excessive and obsessive social media use. AT&T's "It Can Wait" campaign that was

developed by BBDO New York shows the horrible consequences of texting while driving (*It*

Can Wait). A similar campaign, while not as important as preventing texting while driving, would communicate to adolescents how critical it is to their cognitive development to self-manage internet and social media use. Ads can be placed on almost all forms of media, including social media. These ads can target specific age groups to promote the critical daily decisions that young people must make.

Separate from new policy decisions by the federal government, state governments, and local school districts, the suppliers of social media platforms should take more active and explicit steps to allow their users to manage consumption. Adolescent users could opt-in, perhaps with the encouragement of their parents, to receive daily or weekly alerts from social media indicating their usage quantities and patterns. The alerts could also include triggers or warnings if usage exceeds a certain number of minutes or hours. The platforms could allow adolescents or parents to lock access during a reserved homework time block. Parental control could be limited to turning on and off the access, allowing the adolescent to avoid unwanted snooping. While these steps might slightly reduce the consumption of social media, the industry would demonstrate the ability to self-manage, reducing the probability of heavy-handed and general regulation. For the social media platform providers, nothing would be worse than being forced to post a "Surgeon General's Warning" on the smart phone application or website.

Opponents to these policy proposals will argue that the negative effects are minor or that that the industry and medical community need more study and data. The time to act, however, is now. It is true that the full depth and scale of the impacts are not fully known. The full impact will not be known until today's adolescents are fully matured with the risk being having a generation of permanently distracted, shallow-thinking knowledge workers at a time when the demands for the highest level of reasoning ability is greater than ever. The policy

recommendations are in fact quite reasonable. The government policy would not encroach on free speech or other fundamental rights. The policies would only continue ongoing research and package the most current findings for use at the state and local level to fully educate students on the risks and management of social media use. Social media platform companies would also simply add basic management features that adolescents or parents could opt-in to use. The internet is fundamentally changing how our society works and plays, communicates and shares. These changes bring great opportunity. What society cannot bear however, is fundamental and negative changes to how the next generation of our society thinks. Simple education and usage policies will allow governments, families, and individuals to reap the benefits of these changes while being prudent about the risks.

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