

What's Happening To Us: Communicating the Good, the Bad, and The Ugly about Social Media and Mental Health

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ABSTRACT

As social media has become an ever-present part of our daily lives, it is natural to ask what effects it is having on our mental and emotional well-being. How much scrolling is "too much"? Are certain apps worse for our mental health than others? How can we balance the positive and negative impacts of our interconnected world? In this paper, we seek to not only answer these questions, but present those answers in an eye-catching, digestible way. In this paper, we design and deploy a social media impact survey to 134 respondents who tell us how much time they spend on social media, what apps they favor most, and how they feel these factors impact their mental health. Then, we create an infographic, designed for use on social media itself, to convey this information to users in addition to practical suggestions for improvement. Social media users need to know what effects, if any, their habits are having on their mental health—and what to do about it.

1 INTRODUCTION

The rise of social media applications has rapidly and fundamentally changed the way our world works, from business to politics to relationships. The advent of Facebook in 2004, Instagram in 2010, and the more recent explosion of TikTok in 2018, among other apps, have each dramatically altered the way we spend our time and interact with each other. Indubitably, many of these shifts are positive: our world's unprecedented interconnectedness enables us to share with and learn from people all over the world, broaden our perspectives, and develop a "citizen of the world" posture more than ever before. On the other hand, however, the deluge of content on social media apps makes it difficult to separate fact from fiction even when we are unable to tear our eyes away.

With now more than 20 years of social media experience under our belts, it is natural to ask what impacts its use has on our health and well-being. How much time spent scrolling is too much? Which applications are the most "addictive"? Are social media apps really making us anxious, depressed, and unfocused? Even smartphone companies themselves, like Apple and Samsung, seem to be weighing in: most phones now have a "Screen Time" feature which tracks users' time spent on various apps, and the introduction of "Focus" and "Time Limits" allows users to limit their own access to certain apps. Even on social media itself, users are often confronted with information about the harmful effects of social media. Until recently, however, while most of us have harbored a general idea that we spend too much time on our phones, empirical evidence regarding the actual negative effects of social media, and suggestions on what to do about those effects, have been lacking.

We as the social media user base need to think deeply and honestly about how these apps are affecting us, and then take action. With this project, we aim to equip people to do just that, first by exploring the relationship between social media and mental health, then by channeling our findings into an attention-grabbing, digestible, and informative infographic. These findings will discuss our social

media habits, how we feel about those habits, and what changes we can make to do better. Ideally, this infographic will be shared online—via the very social media sites it discusses—to reach a wide audience that deserves to know how these apps are affecting them.

Our contributions in this paper are twofold. First, we create a survey to gather data on people's social media habits and how they feel those habits affect their mental health; second, we design an infographic inspired by our survey results, with the goal of informing people of how social media apps affect them and providing suggestions on what they can do about it.

Section 2 details work related to this topic; Section 3 presents our survey design and results; Section 4 discusses the design and organization of our infographic; Section 5 details our findings and recommendations based on our research; and Section 6 concludes.

2 RELATED WORK

As social media use (and screen time in general) becomes more and more prevalent over time, many studies have sought to understand its effects on mental health, interpersonal relationships, and general well-being.

A 2018 study from Common Sense Media [7] sought to understand social media habits and perceptions specifically among teenagers. They found that 89% of teenagers owned a smartphone, and 70% used social media more than once a day. Perhaps surprisingly, respondents were more likely to rate their social media use as having a positive effect on their well-being than a negative one. Despite this, respondents who reported feeling sad, lonely, or hopeless tended to rank social media use as a higher priority and as having more positive effects than those who did not. This suggests that these respondents might have falsely believed that social media had a positive effect on their life, when in fact the opposite was true. In 2023, Common Sense Media released an updated smartphone research study [6] on adolescents, which found that social media use had only increased over time: teenagers spent an average of four hours on social media per day, and over half of participants received more than 237 notifications a day. Of particular note in the 2023 study was the arrival of TikTok on the scene, called "irresistible" in the study due to its "bite-sized pleasure" and an algorithm which expertly "adapts to the user's interests or mood." TikTok users were more likely to spend longer using the app, often upwards of seven hours a day.

Multiple studies have established an association between social media use and negative mental health effects, such as anxiety, depression, and loneliness. A 2019 Study [2] collected data from the 3826 adolescents, starting in their 7th grade year, over a period of 4 years via annual surveys. They found that in general, depression symptoms increased every year, and that with every 1-hour increase in social media use, there was a corresponding 0.41-unit increase in depression symptoms. A 2020 study [1] asking the same question pointed out that retrospective reports on social media use are not always accurate; they performed a time-diary study on 4032 participants aged 13-15 which not only found a correlation between social media use and depression symptoms, but also, even more concerningly, one between social media use and self-harm behaviors.

Some studies have also sought to examine how these associations vary by gender; a 2020 study [8] involving 11,427 13-15-year-olds

Table 1: Social Media Impact Survey Demographics

	18 - 24	25 - 34	35 - 44	45 - 54	55 - 64
Female	67	9	2	3	4
Male	42	4	1		1
Non-Binary	1				
total	110	13	3	3	5

from the United Kingdom found that the association between screen time and depression symptoms existed for both genders but was much stronger in girls. Girls who were heavy screen time users were 166% more likely to experience symptoms of clinical depression than non-heavy screen time users, whereas this number was only 75% for boys. Another 2020 paper [9] combined the results of 3 separate studies covering 221,096 adolescents found that heavy users of social media were twice as likely to experience mental health issues, and that girls were more likely to be heavy users than boys. The aforementioned time-diary study also found that their association was stronger in girls than in boys, suggesting that girls suffer more from the harmful effects of social media than boys do.

Many studies have established the negative effects of social media use on mental health, but some researchers have also begun to examine the positive effects of limiting social media use. A 2018 study [5] separated 143 undergraduates into 2 groups: a group that limited social media use to 10 minutes a day, and a control group that used it as they normally would for 3 weeks. The limited-use group showed statistically significant reductions in feelings of loneliness. A similar study conducted on 230 undergraduates in 2023 [4] showed that limiting social media to 30 minutes a day for just two weeks yielded decreases in loneliness, depression, anxiety, and fear of missing out. Similarly, a 2020 study involving 140 Facebook users age 18-51 [3] found that reducing Facebook use increased feelings of life satisfaction over the long term (3 months) and interestingly, also increased physical activity.

3 SURVEY

3.1 Design and Demographic

We conducted a survey in April 2024 on social media use with the goal of determining how, and to what extent, it affects its users' mental well-being. We designed the survey with two objectives: one, to get an idea of people's social media habits, and two, to determine how people perceive how these habits impact their well-being. The first portion of the survey asked about people's habits: which social media apps they use the most, how much time they spend on them, and what time of day they most often use them. The second portion asked people to rate these habits by stating which apps they feel have positive or negative effects, whether they desire to change their current habits, and how they rate their mental health in general. With these questions, we sought not only to determine whether there was an association between social media use and negative mental health effects, but whether this association was affected by more specific factors such as gender, apps used, or amount of time spent.

We received 134 responses to our survey; they ranged in age from 18-62, and their age and gender demographics are listed in Table 1. Our full survey questionnaire can be viewed at <https://forms.gle/fk6uXoVBbrZJA4ZA>.

3.2 Limitations

We did gain a lot of insight with the data we received from the participants that filled out the survey, however there are some limitations with the data that we would like to note first. While we did receive responses from each of the age ranges, the majority of our

participants were in the 18-24 range. This limits our evaluation on how social media use might affect other age ranges as well as not being a accurate representation of that particular population since only shows what a small number of people feel and think.

Additionally, the gender of our respondents were mainly female and male, which hinders the evaluation of how social media use might affect other genders. Furthermore, the results of non-binary response will be skewed since the evaluation was only one participants. However, we hope for the future we can gain more responses from this population to get a more accurate representation of how social media use affects this population.

From our survey we receive 134 responses, which is a well sized data set, however, this is only a small portion of the the people that are active on social media. So results might not be a fair representation of how majority of people on these platforms are affected by social media and how they feel.

Lastly, there was an oversight when creating the survey question in particular to what social media app people use regularly. Facebook was not included as an option due to our original plan to look into social media usage in adolescents and we felt that adolescents would not be using Facebook as regularly. Therefore, the most popular social media apps that we found with Instagram, Youtube, and TikTok might include FaceBook. In the future, we would conduct this survey again an include Facebook as well as including a section where they can select other and write in what they are using.

3.3 Results

Our results showed that the most popular apps among our respondents were Instagram with , YouTube, and TikTok. The vast majority (80%) of participants reported spending between 1 and 4 hours on social media every day, with about 10% spending more time and 10% spending less time. Over half (56%) of participants believed that social media has a negative impact on their well-being, and the apps that the participants rated most as having negative effects were Instagram and TikTok. Nearly 85% stated that they want to use social media less than they currently do, and 83% reported having considered taking a break from social media for mental health reasons.

Additionally, we saw a statistically significant correlation between social media use and negative mental health effects. The group which reported spending less than 1 hour on social media every day was markedly less likely to report feeling chronic anxiousness than groups who reported spending an hour or more. Further, the group that spent between 4 and 5 hours per day on social media was the most likely to report struggling to focus for long periods of time at 80%. Generally, participants that reported spending more time on social media were more likely to report feelings of anxiousness, sadness, and lack of focus.

Furthermore, these associations were stronger and weaker with certain applications. TikTok users were the most likely of all app users to report spending more than 3 hours a day on social media (70%), and TikTok was also rated highly by participants as having negative mental-health effects. TikTok's addictive, user-adaptive algorithm that keeps users scrolling may be to blame for this. YouTube users were the least likely to spend more than 3 hours on the apps, and interestingly, YouTube was rated the highest by users as affecting their mental health positively.

4 INFOGRAPHIC

4.1 Goals and Organization

Our goal was to create an eye-catching, easy-to-read design that could be easily shared and digested on social media so that it would be accessible to all. We aimed to funnel our results into the most informative, helpful statistics and present them in a way that would lend naturally to suggestions for improvement.

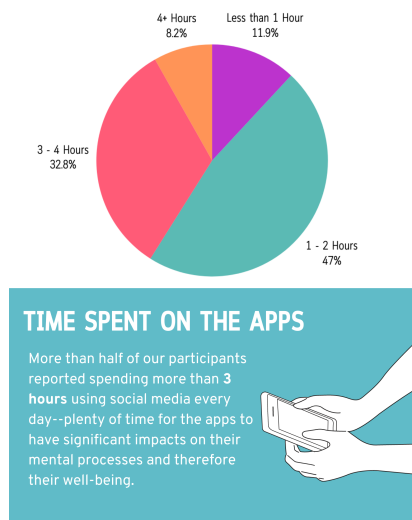


Figure 1: Pie Chart displaying the time our respondents spend on social media each day.

To this end, we organized the infographic into four main components, each with a different task and goal in mind. The first component is an eye-catching title page followed by an introduction to the problem of social media use and mental health in order to gain readers' attention. Furthermore, we wanted to highlight why learning about this topic is important and how it might affect them. In the second component, we present data specifically about social media habits: what apps are most popular, and how much time people typically spend a day on social media. Thirdly, we move into tackling data on the relationship between social media use and mental health, with the goal of conveying to the reader how specific apps, along with spending lots of time online, may be harming them. Finally, we leave the reader with concrete suggestions for improving their mental health through managing their social media use.

4.2 Design Choices: Social Media Habits

The first data-presentation portion of our infographic focuses on conveying data specifically on our respondents' social media habits. Before we present trends and associations between these habits and mental health, we first need to give our readers a sense of what these habits are. We chose to present data specifically on our respondents' preferred social media apps and the time they spent on them. The visualization we created to display our users' most often used apps uses variously-sized bubbles, with the application's logo acting as a label, to convey how popular each app is. Readers can easily glance at this page and see that Instagram, YouTube, and TikTok are the most popular choices, while also being prompted to consider which apps they themselves use the most in order to see how they compare to our respondents.

Figure 1 shows the next page of the infographic, which highlights how much time our respondents reported spending on social media each day. The pie chart design conveys to readers just how few people are spending an hour or less, with the vast majority spending at least an hour, if not more. Furthermore, using a pie chart makes how much time our participants are spending easily seen. Lastly, we chose colors that not only contrasted well, but also blended seamlessly with our infographic color scheme in order to make the whole design have a cohesive look.

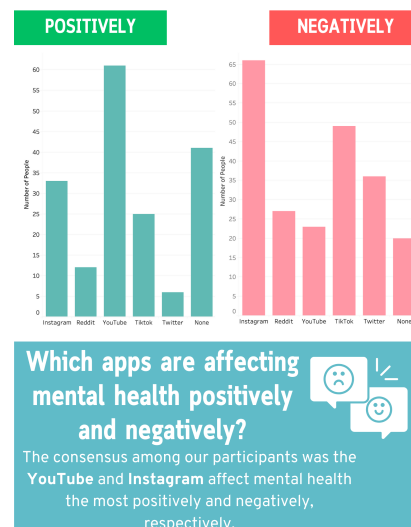


Figure 2: Bar charts conveying which apps our respondents believe have positive and negative effects.

4.3 Design Choices: Social Media Effects

The most important information we needed to convey in the infographic was the effects of social media use: specifically, the association between social media use and negative mental health outcomes. To that end, we not only reported how our respondents perceived these effects (i.e. whether they rated social media as being a positive or negative influence on them, and which apps they attributed that rating to most) but we also analyzed our data to find correlations between certain habits and negative mental health outcomes such as chronic anxiousness, sadness, or lack of focus.

To that end, we included two pages which presented the data on users' own perceptions of social media's impacts on their mental health. The first page displayed our respondents' answers to the question of whether they believe social media has an overall positive or negative effect on their well-being. Color was used strategically, with green indicating "positive" and red indicating "negative", so readers could immediately digest the results. By just glancing at the resulting visualization, users can easily see that most respondents rated social media as having a negative impact on their mental health.

In Figure 2, we display, using bar graphs, which apps respondents reported as having positive and negative effects on their mental health. The graphs are placed side-by-side to allow for easy comparison, and colored in red and green to be easily distinguishable. These visualizations not only allows readers to see our respondents' standout apps, but also allows them to directly compare each app's ratings.

We also analyzed the correlation between the time respondents reported spending on social media and whether they reported feeling anxiousness or lack of focus. We reported the results in a direct-comparison bar graph, shown in Figure 3. We designed the bar graph to clearly demonstrate that those who reported spending less time on social media generally reported lower levels of anxiousness and lack of focus.

Finally, we took a closer look at which apps were associated with more time spent on social media every day. Specifically, we analyzed how many of each app's users reported spending 3 or more hours every day scrolling on social media. The resulting bar chart is shown in Figure 4; readers can easily tell that TikTok users are the most likely to spend more than 3 hours on social media, followed by Reddit and Twitter/X users.

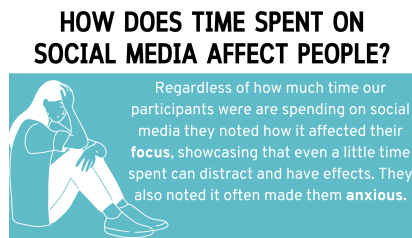


Figure 3: Comparison bar chart displaying the correlation between time spent on social media and negative mental health outcomes.

5 FINDINGS AND RECOMMENDATIONS

In addition to reporting on the associations we found between social media use and mental health, we also strove to develop evidence-based recommendations on how to mitigate the potentially harmful aspects of social media use. We decided on four suggestions for our readers, all of which are based on the analysis of our data, which we included on the final page of our infographic.

First, we recommend that our readers set time limits for social media apps, either manually or through the feature on most smartphones. This is based on our finding that more time spent on social media is associated with negative mental health effects; our research shows that limiting social media use to less than an hour a day can provide significant mental health benefits.

Second, we suggest that our readers seriously consider which apps they use. Our research found that TikTok users were by far the most likely to spend 3 hours or more on social media, with 70% of them doing so. Simply by switching to different applications, perhaps ones that are less addictive, users can lessen time spent on social media and thus experience health benefits.

Third, we want our users to be present by putting their phones away (or on Do-Not-Disturb) while engaged in in-person interactions. Not only is this more polite, but it can prevent time spent mindlessly scrolling and have the benefit of improving interpersonal relationships, which are also associated with better mental health.

Finally, we encourage our readers to get moving! The emotional and mental health benefits of physical exercise are well-documented, but most importantly, scrolling TikTok is impossible while running around outside. We want our readers to put the phone down and get moving—evidence shows their health will thank them for it.

6 CONCLUSION

In a world where social media permeates our daily lives, it is imperative that we as users understand how social media is affecting us and what we can do to mitigate any potential harmful effects. Our social media impact survey involving 134 users strengthened the results of previous studies by showing a statistically significant correlation between social media use and negative mental health outcomes like anxiety and lack of focus: the group that suffered the least negative mental health effects was those who spent less than an hour a day on social media. It also yielded a correlation between using apps like TikTok and Reddit and spending more time on social

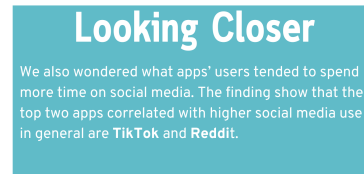


Figure 4: Comparison bar chart displaying the correlation between time spent on social media and negative mental health outcomes.

media generally. With these results, we designed an infographic specifically for use on social media to convey these associations to users and provide them with evidence based suggestions. Our design highlighted our respondents' social media habits, the apps most correlated with negative effects, how much time our respondents spend on social media as compared with their responses to mental health questions. Based on these findings, we recommended that our readers consider which apps they spend time on and make efforts to limit their time on social media generally. By taking control of our social media habits, we can work toward better mental health outcomes for all.

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