

Analysis of Social Media Addiction in Teens and Young Adults: A Recommendation Report

Ariela Gashaj

This study evaluates the objective and subjective data regarding phone and social media usage collected from eighty respondents' personal cellular devices among teens and young adults. Young adults and adolescents were found to have a daily average screen time of 6.54 hours (SD = 2.74) with 96.3% of respondents reporting at least one social media application in their top three most used applications. Sixty percent of the respondents believe they are addicted to their phone, and sixty-six percent believe that it negatively impacts their grades. Seventy-five individuals (93.8%) reported experiencing one or more of the following: depression, anxiety, low self-esteem, body image, sleeping problems, social isolation, and emotional difficulties. Females exhibited greater use of social media than males, but these differences were not statistically significant, indicating that social media usage is high with consistently negative effects regardless of gender. The addictive behavior which is reinforced with social media usage creates a dopamine imbalance leading to poor self-perception, concentration, and poor sleeping habits, among other negative impacts. Thus, the disadvantages of social media far outweigh the advantages that are provided. School systems and families need to turn away from this hyper dependence on technology and social media to help teens and young adults experience proper sociological and psychological development, which in turn strengthens and improves their mental health and educational outcomes.

Keywords

Social Media • Technology • Mental Health • Teens • Young Adults • Dependence • Addiction • Self-Perception • Dopamine Imbalance

Social media is an incredibly powerful digital resource that has provided an intense amount of opportunity for growth in every aspect of society, and it has greatly expanded its reach across the

Wayne State University, Department of Public Health, arielagashaj@wayne.edu

doi: 10.3998/ujph.7607

Conflicts of interest:

The author has no conflicts of interest to disclose.



world. Social media applications are interactive platforms where individuals can connect and share content, ideas, and thoughts with other individuals or groups of people. It can be used as a way to share with others about oneself or even to promote and sell products. These applications include Facebook, Twitter, Instagram, TikTok, Snapchat, BeReal, and Pinterest, among others. Because of its vast grasp on society, the effects of social media need to be analyzed. While the benefits of social media usage are clear as it allows quick and easy communication, the drawbacks of social media need to be acknowledged. Social media applications are designed to keep its users scrolling, allowing it to be very addictive.

Many teens and young adults use social media at alarming numbers with roughly 84% of adults under age 30 using a social media platform (Auxier & Anderson, 2021). Because they are still developing, adults under age 30 are highly malleable and vulnerable to the environment around them including the environment which they are exposed to on social media. With the amount of exposure to social media that many teens and young adults are experiencing, there is also increased depression, anxiety, and lack of identity. It is important to determine how prevalent this issue is among this population of individuals as well the extent of its effects. This report examines the prevalence of social media usage and its effects on this population, which is especially important following the Covid-19 pandemic, a period where teens and young adults were exposed to high periods of social isolation. The level of distraction that social media can cause is an important factor in understanding the effect of the possible hyperdependence that may be experienced by this generation of individuals.

Society has become technologically dependent in many aspects ranging from communication, navigation, and entertainment to education, work, and personal finances, many of which are accessed on one's personal cellular device to improve convenience and use (Concordia University St. Paul, 2021). This excessive dependence on technology in one's personal life at an early age can have varying effects on the outcome of their education and thus their future job prospects and overall mental health. Many times, it can be used as a distraction to escape from reality or any stressors that the individual may have. This can influence the individual's coping mechanisms, resilience, and the relationships they form with others.

With an increase in social media use and an infinite access to information, it is difficult to determine what information is accurate or credible and what is misinformation or disinformation. Misinformation is the unintentional spread of inaccurate information, while disinformation is the intentional spread of inaccurate information. With the extensive wealth of information that is present, it can be exceedingly difficult for even adults to distinguish what is true or not, let alone teens and young adults. At this age level, these individuals are still developing their identities, and therefore it can be easy for the overconsumption of such information to play a role in their perception of society, outlook on life, mental health, and overall education. Though this is not the case for every individual, the connections and excessive availability of information can indeed be detrimental. Furthermore, the overconsumption of information on social media can also create a false perception of reality and this can be harmful for an individual's mental health, especially teens and young adults as they are still developing their identity. Because these addictions can occur early on in one's lifetime, it is important to understand the multi-faceted effects that social media can cause and how much of an effect it can have on their mental health and overall development.

Social Media Dependence and Addiction

Addiction is the physical and mental dependency on a particular substance, thing, or activity. The substance or activity and the magnitude can vary greatly between individuals; however, addiction occurs by a similar process. According to the American Addiction Centers (2022), the process of addiction occurs in the following six consecutive steps: initial use, abuse, tolerance, dependence, addiction, and relapse. Individuals can be at an increased risk for addictive behaviors under genetic, environmental, or developmental factors as well (National Institute on Drug Abuse, n.d.). Social media is used by millions worldwide and children are getting younger and younger when they start using it. According to Kassa et al. (2016), 95% of teenagers had at least one social media account meaning that a large majority of the population of children and teens can be at risk for addiction to social media. The prevalence of social media abuse can be high especially among those who turn to social media for validation or acceptance by others.

Because of the variety of social media applications with each offering its own unique platform to share and express oneself, it can be easy to get addicted to one or multiple at once. Social media usage can be addictive because of the reinforcing nature of the applications, which releases dopamine when checking social media, when watching videos or pictures, or when people respond. This dopamine release can get addictive, and it can be hard to control, leading to abuse. After using and abusing social media for so long, individuals can build a tolerance to it and become dependent. This is where addiction occurs, and at this stage it can be very difficult to get accustomed to life without it. It is also increasingly difficult to control because most individuals still need their phones for school, to communicate with their parents, and with their classmates, among other reasons. It is important to determine the extent to which adolescents and young adults are using their cell phone, and whether this is correlated to social media usage.

Addiction has effects on the brain processes and the behavioral patterns of individuals, which is crucial in determining educational outcomes, communication skills, and their relationships with others, among many other factors. *Dopamine Nation: Finding Balance in the Age of Indulgence* written by Dr. Anna Lembke explains the effects of excessive dopamine usage on the brain. The access to dopamine has become infinite, which is highly related to the outreach allowed by social media and the cell phone. At any time of day, individuals can satisfy their dopamine cravings, and this has caused a complete lack of self-control. With this increased access, individuals develop an avoidance of discomfort in our society whether from social interaction, daily tedious tasks, or more. Pain and discomfort are necessary to value and truly experience the effects of dopamine. Dr. Lembke explains this concept as a balance between pain and pleasure. Maintaining a balance is essential in maintaining a purposeful and fulfilling life because excessive dopamine tilts the outcomes towards pain, and the effects of dopamine are no longer experienced. This means that although teens and young adults turn to social media for dopamine, they have lost the ability to experience its full effects.

A high dopamine tolerance has been associated with aggression, impulse control, symptoms of ADHD, and addiction, according to Health Direct (2023). Because of the dopamine tolerance and the lack of effectiveness, it can cause individuals to feel irritated with those around them when that level of dopamine can no longer be reached. The excessive use of social media also has tremendous impacts on an individual's cognitive performance as well as their short-term and long-term memory. Bahal (2023) claims that chronic exposure to social media affects memory due to the overload of cognitive resources and constant stream of information from the social media platforms. With the increased dopamine tolerance, individuals may scroll quicker through videos or posts on social

media looking for that increased release of dopamine, and this overload of information shortens attention span and memory. The information going in is perceived to be dispensable and recall practices are being diminished as the brain searches for another stronger release of dopamine to counteract the tolerance that has been built up. This lack of attention and poor recall will then translate into the classroom, as it will have negative impacts on a student's educational outcomes.

Self-Identity and Interpersonal Relationships

Teens and young adults are at a stage in their life where they are still developing their identities and finding their purpose. There are eight stages of psychosocial development as described by Erik's Psychosocial Theory. The three that are most applicable to this population of individuals include competence, fidelity, and love (Erikson, 1968), each of which affect the development of confidence, identity, and relationships, respectively. Competence is described as initiation vs. guilt, and this is mainly applied to elementary school children, but it can apply to later age groups as well, especially if they have developed a hyper dependence on social media at a young age. This is where individuals can either develop pride and confidence *or* inferiority and lack of confidence. The presence of social media plays a large role in self-esteem which is crucial in this age group. Next, fidelity is described as identity vs. role confusion, which is typically applied to teenagers as they develop their sense of identity and purpose in life. With the overload of information and numerous lifestyles present on social media, it can make it increasingly difficult to find one's identity and this can cause a lack of purpose or identity.

Lastly, love is described as intimacy vs. isolation which applies to late teens and young adults as they desire to share their life with others. Social media can make it very difficult to form genuine connections and relationships with other individuals. The level of intimacy does not compare to real world connections. Just as well, social media can make it easy to isolate and disconnect from individuals. With improper development, these factors can cause individuals to be discouraged and experience lower levels of self-esteem which may make them more susceptible to addictive behaviors. When individuals connect online, the ability to communicate effectively in person is weakened substantially. The presence of social cues and body language with interpersonal and face to face communication is far more valuable than social cues on social media. The lack of self-esteem, purpose, and genuine relationships can lead to decreased mental health outcomes. The advantages and disadvantages of social media are clear, but it is unknown to what effect social media negatively impacts the mental health and educational outcomes of teens and young adults.

Research Methods

To gain a greater understanding of the dependence and effect of social media among teens and young adults, the most practical process is through a questionnaire. This method was chosen in order to gather a larger quantity of data that will allow for a thorough understanding of the prevalence of social media usage within this population as well as an understanding of the multitude of variables that may be affected due to social media usage as related to one's self-perception. All questions were close ended to ensure that the questionnaire can provide quantifiable data. This questionnaire was emailed to all individuals within the English Departments at both a private college preparatory high school and a public university within the greater Detroit Metropolitan

Area. It was also posted to social media for any other high school or college students to complete, and those individuals were also asked to share the online questionnaire with family members or relatives that fall within the category of teens and young adults. The questionnaire was left open for a week, accumulating eighty responses. After one week, the questionnaire was closed. To allow for a more accurate and honest completion of the questionnaire, the respondents remained anonymous to avoid Social Desirability Bias, which can be described as the tendency to alter one's responses to improve self-image.

The first question was regarding gender in order to assess for any difference between males and females. This questionnaire included objective data that can be found on each respondent's personal cellular device. This data included the daily average screen time for the previous week, the top five apps that were used in the previous week, and the daily average number of times the phone had been picked up by that individual. For the purposes of this report, the social media applications mentioned only include Facebook, Twitter, Instagram, TikTok, Snapchat, and BeReal, as these are some of the most used social media applications among teens and young adults. Only the top three applications were evaluated as many respondents did not include their top five applications. The remaining questions regarding the respondents' cell phone and social media usage were subjective. These questions asked how the respondent feels about their screen time on a scale of one to ten, whether or not they felt negative or positive regarding their screen time, what effects they felt from social media usage, if they feel they are addicted to social media, how distracting the phone is on a scale of one to ten, and if they feel that social media usage affects their education. This extensive list of questions with the wide range of respondents allows for an accurate and comprehensive analysis of social media addiction among teens and young adults. The full questionnaire can be found in the Appendix for review.

Results

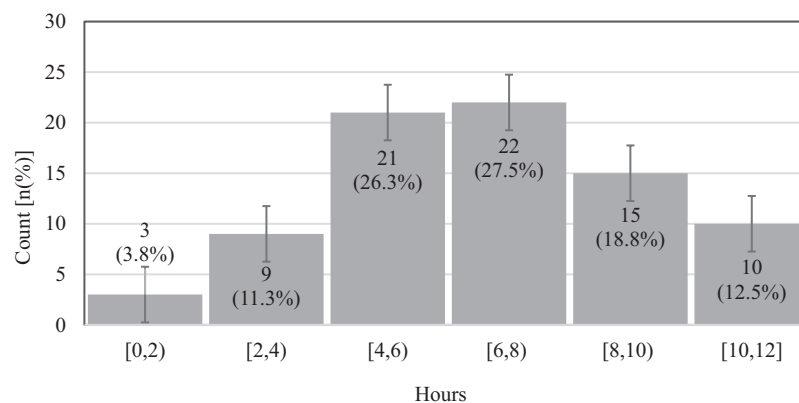
The following results are taken from the questionnaire, and each question is evaluated in the order in which it was presented. The first set of questions are evaluated under *Phone and Social Media Usage*, and the second set of questions are evaluated under *Self-Perception of Phone and Social Media Usage*. Of the eighty respondents, sixty-two were female, sixteen were male, and the remaining two preferred not to say. Given the data, while understanding that there is an uneven distribution, the remaining results will be evaluated to see if there is any difference between the effects of social media usage among males and females.

Phone and Social Media Usage

The following three sections on the form relied on the individual's objective data collected from their phone settings regarding daily average screen time, most frequent applications used, and the daily average number of phone pickups.

Daily Average Screen Time: Table 1 represents the distribution of individuals and their daily screen time with two-hour intervals. Between all eighty respondents, the daily average screen time ranged from 0.95 hours and 12 hours. The overall average daily screen time for all individuals is 6.54 hours (SD = 2.75), which amounts to 45.78 hours in one week. This is nearly two days spent on the phone within seven days. The average daily screen time for males is 6.55 hours (SD = 2.82), while the average daily screen time for females is 7.65 hours (SD = 2.68). From the data collected,

Table 1. This is a histogram showing the distribution of the *Daily Average Screen Time* of all respondents, ranging from 0–12 hours with two-hour intervals per group. (1 – Negative; 10 – Positive)



it shows that females spend roughly one hour more on their phones than males. However, this difference is not statistically significant ($p = 0.42$). The results are slightly skewed to the right, with forty-seven individuals (58.8%) having spent more than six hours daily on their phone and thirty-three individuals (41.3%) having spent less than six hours daily on their phone. This value jumps to sixty-eight individuals (85.0%) when including all respondents that have spent four or more hours daily on their phone. There are only 12 individuals (15.0%) who have spent less four hours a day on their phone.

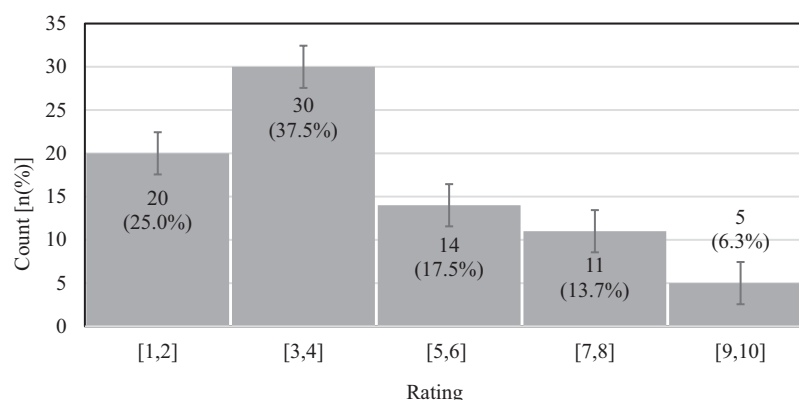
Top Apps Used: For this question, respondents were asked for the top five apps that were used on their phone, however, not everyone responded with the top five. Only the top three applications were included in the data, and of those three, it was evaluated how many included a social media application. The time that was spent on each application was not included as many respondents did not include this in their response. Sixty individuals (75.0%) had either two or three social media applications in their top three. Seventeen individuals (21.3%) had only one social media application, and only three individuals (3.7%) did not have any social media applications in their top three. In total, 96.3% of respondents had at least one social media application in their top three most used applications on their phone. For both males and females much of their screen time is spent on social media as roughly two out of three of their most used applications include social media applications such as Facebook, Twitter, Instagram, TikTok, Snapchat, and BeReal. This explains that time spent on one's phone due to social media is common regardless of gender, however the report of daily usage previously described suggests the severity may be greater for females compare to males.

Daily Average Phone Pickups: Respondents answered that they pick up their phone between 7 and 430 times a day. The average was roughly 140 times a day ($SD = 87.74$). Males pick up their phone daily on average 129 times in a day ($SD = 89.96$), while females pick up their phone 144 times in a day ($SD = 87.80$). This finding is consistent with the reported daily use being greater among females, however, this difference is not statistically significant ($p = 0.27$).

Self-Perception of Phone and Social Media Usage

The remaining questions on the form relied on the individual's self-perception of topics related to social media usage, effects of social media usage, and addiction.

Table 2. This is a histogram showing the distribution of the respondents' rating of their personal screen time, within intervals of two ratings per group. (1 – Negative; 10 – Positive)



How do you feel about your daily screen time? Above is a histogram that explains the distribution of the respondents' personal rating and perception of their screen time. A rating of 1 indicates negative, while a rating of 10 indicates positive, and these were grouped into intervals of two to have a better understanding of the general distribution. The average rating was 4.23 (SD = 2.44). As shown on the histogram, the results are skewed to the left, as most of the individuals feel negative regarding their screen time with fifty respondents (62.5%) having chosen a rating of four or lower. Males had an average rating of 3.86 (SD = 2.25), while females had an average rating of 4.21 (SD = 2.43). Males reported feeling worse though they had a lower screen time. However, this difference is not statistically significant ($p = 0.08$).

Do you feel social media affects you positively or negatively? Of the eighty respondents, twenty-two (27.5%) believed that social media affected them positively, while fifty-eight (72.5%) believed that social media affected them negatively. Of the males, 81.3% reported that social media has a negative effect, while 71.0% of the females reported that social media has a negative effect. This is a clear example of the addictive behavior of social media. Though individuals feel that social media impacts them negatively, it is used by nearly every respondent.

Do you feel social media affects the following? (Select all that apply): Respondents were asked to select which of the following were affected when using social media, and results are presented as follows:

Table 3. Respondents' Self-Perception of Variables Affected by Social Media Usage

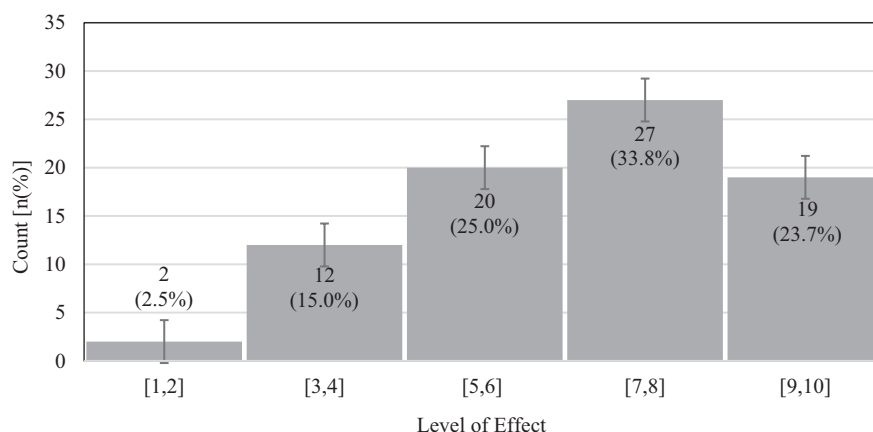
Variable Affected by Social Media Usage	# of Respondents that Selected Given Variable
Depression	43
Anxiety	44
Low Self-Esteem	58
Body Image	53
Sleeping Problems	59
Social Isolation	39
Emotional Difficulties	33
None of the Above	5

The two biggest issues that affected this group of individuals are sleeping problems and low self-esteem. Fifty-nine respondents (73.8%) felt that they experience worsened sleep because of social media, and fifty-eight respondents (72.5%) feel that social media affects their levels of self-esteem. These were followed by body image, anxiety, depression, social isolation, and lastly emotional difficulties. Only five individuals (6.3%) selected that social media does not affect any of the above. This shows that though social media can be used for good, it is typically not the case.

Do you believe you are addicted to your phone? Given the results of the questionnaire, 60% of individuals believe that they are addicted to their phone. Of the males, 68.8% believe they are addicted to their phone, while 58.1% of females believe they are addicted to their phone.

On a scale from 1–10, how much does excessive phone usage affect your life? How much does it distract you from what you are doing? (1 - Not Distracting At All; 10 - Very Distracting): The histogram depicted on Table 4 is skewed to the right indicating that phone usage does prevent individuals from completing necessary tasks. There are sixty-six respondents (82.5%) who have a rating of 5 or above, while fourteen respondents (17.5%) have a rating below 5. The average rating for all individuals is 6.83 (SD = 2.22). For males, this average rating is 6.13 (SD = 2.06), and for females, the average rating is 7.00 (SD = 2.21). This indicates that females feel that their phone is more distracting. However, this difference is not statistically significant ($p = 0.07$).

Table 4. This is a histogram showing the distribution of the effect of social media on the respondents' daily tasks, with intervals of two ratings per group. (1 - Not Distracting At All; 10 - Very Distracting)



Does excessive phone usage negatively affect your grades? Lastly, respondents were asked about the impact of phone usage on their educational outcomes. Given the results of the questionnaire, 66.3% of individuals believe that their phone usage affects their educational outcomes, while only 33.7% believe that social media usage does not have an impact. For males, 56.3% feel that excessive phone usage negatively impacts their grades, while for females, this value is up to 71.0%.

Discussion

Social media addiction may not have the same physical health outcomes as substance use or drug use. Additionally, it may or may not be the primary contributor to mental health disorders; however,

it is a root cause to many problems that drastically affect the mental health and educational outcomes of both teens and young adults. The evidence showcases that social media can present with the similar addictive behavior and, thus, can have similar impacts on an individual's brain processes, relationships, and educational outcomes, among many other innumerable negative health outcomes. The prevalence of the issue is clear too. Though much of the data collected for this report is based on one's self-perception, it is still evident that the issue is affecting many students. Differences in gender can help provide a better understanding for the prevalence of the issue and where it is concentrated as well as what aspects may help to mitigate the issue. Males reported less social media and phone usage and felt worse overall but felt that social media was less distracting with less of a negative effect on grades. The impacts of social media appear more impactful for females. Though the differences between males and females were not statistically significant, further analysis is required to understand and confirm the extent of this difference and what may cause it. For example, various societal, cultural, and biological factors can create varying outcomes. Nonetheless, this issue may not impact males to the same extent as females, but evidence highlights social media addiction is greatly impacting a majority of young adults and adolescents. With the COVID-19 pandemic and increased levels of isolation and phone usage, the issue has only magnified in the past several years, and it is expanding to younger generations as well.

The average daily screen time was more than six and a half hours, and many individuals had an overall poor perception of their screen time and its effects. It is evident that social media use is widespread and associated with negative health outcomes. Roughly 72.5% of individuals perceive that social media has a negative impact on them. Furthermore, about 71.3% of individuals perceive their phone usage to prevent them from completing tasks. This is very important in one's educational outcome. Students procrastinate their homework and necessary tasks, which many times can even go uncompleted because of the preoccupation with the phone and social media usage. Lastly, 74% experience worsened sleep levels. With worsened sleep, individuals are not able to perform properly in their classes. Proper sleep is incredibly essential in the cognitive abilities of these individuals and has a direct impact on their educational outcomes. Lastly, 73% experience lower self-esteem, which can affect the choices they make and their behaviors. This is incredibly damaging to teens and young adults as they are developing their identities. With a poor foundation in self-esteem, these individuals may carry this into their adulthood, and it becomes exponentially difficult to overcome. It is essential to build strong self-esteem at this age. Though it is difficult for teens regardless of their circumstances, social media enhances this issue.

These results are representative of a small population and will vary for each community. In this population, sixty percent of individuals believe they are addicted to their phone. This value may be even higher if an individual is unaware or denies their addiction, which is often the case. It can be difficult not only to admit to others but also to oneself. Just as well, there may be individuals who mistakenly believe they are addicted to their phones, even though they are not. Addiction manifests differently in each individual, making it challenging to clearly define the boundary between addictive and non-addictive behaviors. Nonetheless, from the respondents' self-perception, many individuals believe they are addicted to their phone. This can be correlated with the higher levels of distractedness, the negative perception of social media usage, as well as poor sleep and low self-esteem. Each of these factors can have a negative effect on educational outcomes. Further research needs to be completed in various counties and school systems throughout the United States to provide policymakers with the proper assessment of the effects of social media usage on the mental health of their teens and young adults.

Social media addiction follows the same process as other addictions because of the release of dopamine and dopamine tolerance so its treatment should be the same. The American Addiction Centers (2022) suggests that cognitive and behavioral therapies, peer group support, and other physical and mental health treatments can encourage the person to develop tools for managing chronic dopamine tolerance. Depending on the severity of the issue, an individual can first remove social media applications from their phone and replace that time with another hobby or activity. If the phone becomes too much of a distraction, it can be left in another room until tasks or responsibilities are completed. With support by a friend or family member, accountability can be enforced to break the addiction. By following these steps, an individual can change their behavior and pattern of thinking that first lead to the addiction. However, this action can often be difficult even with the support of a family member or friend. If one is unable to break the cycle of addiction on their own, cognitive behavioral therapy (CBT) is a highly effective approach that provides the necessary support. CBT provides resources that evaluates how an individual's thoughts can affect their actions. Social media addiction, as many others, begin with poor habits and then over time these poor habits get more difficult to control. With CBT, an individual can understand and change their way of thinking, learn problem-solving skills, and gain self-confidence allowing themselves the ability to manage stress and take control over their own actions (American Psychological Association, 2017). By breaking the cycle of addiction, individuals can restore their dopamine balance and lead a more meaningful and fulfilling life.

Education on this issue is also essential. Education should focus on explaining the severity of the issue, how it can occur, and what solutions can mitigate the problem. Furthermore, prevention is most vital, and this requires forming strong coping mechanisms to deal with stress and difficult situations as well as forming strong, meaningful relationships with others. Strong social support reduces the risk for social media and phone addiction, while also helping to mitigate the issue if it does occur. Now, the magnitude of the situation will vary in each community and school district, and the prevalence should be evaluated. Different factors such as the environment, whether urban or rural, can have an impact, as well as the resources that are available in each school district to implement or focus on cell phone usage and social media addiction. The issue is not one that only affects educational outcomes, but an individual's sociological and psychological development, most especially regarding their mental health. The goal is to turn children and adolescents away from the overbearing and overwhelming culture of social media and phones and towards a culture that values meaningful relationships and experiences, creating a balanced level of dopamine. This will also allow students to have stronger attention spans and better memory recall. Introducing activities during school that promote face to face communication can help build stronger communication skills, connections, and relationships.

Conclusion

The phenomenon that has occurred with social media has changed the social framework over the past several decades, and navigating this new framework is incredibly difficult and complex. It is evident that there is an overindulgence of social media, and this is greatly impacting teens and young adults at levels that will have drastic effects on their personal development. Social media usage can lead to highly addictive behaviors, and this issue is detrimental to developing teens and young adults. Social media can have negative impacts on one's self esteem, attention span,

communication skills, coping mechanisms, and relationships. There are ways in which individuals can improve their hyperdependence or addiction with social media use; however, in many cases it requires support, whether from peers and family members or from cognitive behavioral therapies. Creating a culture in public schools that enhances interpersonal relationships while mitigating social media use can be highly effective in improving mental health and educational outcomes. We found high usage of social media and consistently negative effects regardless of gender. Implementing the described recommendations to mitigate this ever-growing form of addiction will allow for a greater focus on personal development, leading to stronger community members and thus stronger communities.

References

- American Psychological Association. (2017). What is cognitive behavioral therapy? American Psychological Association. <https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral>*
- Auxier, B., & Anderson, M. (2021). *Social media use in 2021*. Pew Research Center. <https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/>
- Bahal, J. (2023). *Social media and its impact on memory. Reputation Today. <https://reputationtoday.in/social-media-and-its-impact-on-memory/#:~:text=Recent%20studies%20have%20suggested%20that,ability%20to%20encode%20memories%20effectively>*
- Concordia University St. Paul. (2021). *Emerging trends in psychology: Technology dependence*. CSP Global. <https://online.csp.edu/resources/article/technology-dependency/>
- Dopamine. Health Direct. (2023). <https://www.healthdirect.gov.au/dopamine#:~:text=Having%20too%20much%20or%20too,related%20to%20ADHD%20and%20addiction>*
- Erikson, E. H. (1968). *Identity: Youth and crisis* (Chapter 3). Faber & Faber.
- Kassa, H., Moon, R. Y., & Colvin, J. D. (2016). Media use in school-aged children and adolescents. *Pediatrics*, 138(5). <https://doi.org/10.1542/peds.2016-2592>
- Lembke, A. (2023). Dopamine nation finding balance in the age of indulgence. Headline Publishing Group.*
- Muhammed T, S., & Mathew, S. K. (2022). The disaster of misinformation: A review of research in social media. *International Journal of Data Science and Analytics*, 13(4), 271–285. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8853081/>
- The addiction cycle: What are the stages of addiction? American Addiction Centers. (2022). <https://americanaddictioncenters.org/the-addiction-cycle>*
- U.S. Department of Health and Human Services. (2023). *Understanding drug use and addiction drugfacts*. National Institutes of Health. <https://nida.nih.gov/publications/drugfacts/understanding-drug-use-addiction#:~:text=Over%20time%2C%20the%20brain%20adjusts,achieve%20the%20same%20dopamine%20high>

Appendix

Questionnaire:

Effects of Social Media and Excessive Phone Use on High School and College Students

2. What is your gender?
3. What is your average screen time each week for the past three weeks? (For Apple devices found in Settings under Screen Time, and enter your daily average)
4. What are your top five apps used? Please include time spent on each. (For Apple devices, Go in Settings under Screen Time, and click “See All Activity”)
5. How many times do you pick up your phone? (For Apple devices, found in Settings under Screen Time, click “See All Activity”, then go towards the bottom of the page)
6. How do you feel about your daily screen time? (1 – Negative; 10 – Positive)
7. Do you feel social media affects you positively or negatively?
8. Do you feel social media affects the following? (Select all that apply)
 - a. Depression
 - b. Anxiety
 - c. Low Self-Esteem
 - d. Body Image
 - e. Sleeping Problems
 - f. Social Isolation
 - g. Emotional Difficulties
 - h. None of the Above
9. Do you think you are addicted to your phone?
10. On a scale from 1–10, how much does excessive phone usage affect your life? How much does it distract you from what you are doing? (1 - Not Distracting At All; 10 - Very Distracting)
11. Does excessive phone usage negatively affect your grades?

Results of Questionnaire

1. What is your gender?
 - i. Male: 16 Respondents.
 - j. Female: 62 Respondents.
 - k. Prefer Not to Say: 2 Respondents.
- b. What is your average screen time each week for the past three weeks? (For Apple devices found in Settings under Screen Time, and enter your daily average)
 - i. Data is shown in Table 1: Results of Questionnaire - “Effects of Social Media and Excessive Phone Usage on High School and College Students”. The average screen time is represented by number of hours.
- c. What are your top three apps used? (For Apple devices, Go in Settings under Screen Time, and click “See All Activity”). The results below correspond with each respondent as submitted chronologically. Data in Table 1 represents how many social media applications were included in the respondents’ top three applications used.

- i. Snapchat, Instagram, Photos; TikTok, Music, Hulu; Instagram, Snapchat, Youtube; Instagram, TikTok, Safari; TikTok, Messages, Music; TikTok, Instagram, Twitter; Instagram, Snapchat, Facebook; Instagram, TikTok, Messages; TikTok, Snapchat, Spotify; TikTok, Snapchat, Safari; Messages, TikTok, Instagram; TikTok, Messages, Snapchat; Snapchat, TikTok, Safari; Snapchat, Zillow, Stash; Instagram, Photos, Messages; Messages, WhatsApp, Instagram Snapchat, TikTok, BeReal; TikTok, Snapchat, Instagram; TikTok, Instagram, Snapchat; Snapchat, TikTok, Instagram; TikTok, Snapchat, Instagram; TikTok, Snapchat, Instagram; TikTok, Snapchat, Instagram; Snapchat, TikTok, Instagram; Youtube, TikTok, Instagram; TikTok, iMessage, Snapchat; TikTok, Snapchat, Instagram; TikTok, Snapchat, Instagram; TikTok, iMessage, Snapchat; Snapchat, Instagram, TikTok; Instagram, iMessage, Facebook; TikTok, Youtube, Facebook; Netflix, Snapchat, Instagram; TikTok, Notability, iMessage; Facebook, Chrome, Instagram; Games, Microsoft, and Facebook; Instagram, TikTok, Youtube; Instagram, TikTok, Youtube; Instagram, TikTok, Youtube; Instagram, Township (game), Outlook; Instagram, WhatsApp, TikTok; Instagram, Youtube, WhatsApp; Instagram, Safari, Messages; Instagram, TikTok, Facebook; Instagram, WhatsApp, Youtube; Messages, Instagram, Safari; Messages, Pinterest, Safari; Messages, Snapchat, Instagram; Netflix, TikTok, Snapchat; Netflix, TikTok, Snapchat; Snapchat, Instagram, TikTok; Snapchat, Youtube, Safari; Snapchat, TikTok, Instagram; Snapchat, Tasty Town, HayDay; TikTok, Snapchat, Netflix; TikTok, Snapchat, Netflix; TikTok, Messages, Snapchat; TikTok, Messages, Snapchat; TikTok, Netflix, Snapchat; TikTok, Safari, Snapchat; TikTok, Instagram, Snapchat; TikTok, Snapchat, Safari; TikTok, Instagram, iMessage; TikTok, Safari, iMessage; TikTok, Instagram, WhatsApp; TikTok, Instagram, WhatsApp; Youtube, TikTok, Disney +; Youtube, TikTok, Safari; Youtube, Fantasy Football, Instagram; Youtube, Fantasy Football, Instagram; Youtube, Tumblr, Animal Crossing; Youtube, Safari, Messages; Youtube, Spotify, Photos; Instagram, TikTok, Facebook; Music, Snapchat, Safari; TikTok, Netflix, Snapchat; TikTok, Netflix, Snapchat; TikTok, iMessages, Facetime; Twitter, Snapchat, TikTok.
4. How many times do you pick up your phone? (For Apple devices, found in Settings under Screen Time, click “See All Activity”, then go towards the bottom of the page)
 - a. Data is shown in Table 1: Results of Questionnaire - “Effects of Social Media and Excessive Phone Usage on High School and College Students”. Data in Table 1 is representative of the average number of times each respondent picks up their phone daily.
 - b. How do you feel about your daily screen time?
 - a. Data is shown in Table 1: Results of Questionnaire - “Effects of Social Media and Excessive Phone Usage on High School and College Students”. The results are representative of a scale where one is negative and ten is positive.
 - c. Do you feel social media affects you positively or negatively?
 - a. Data is shown in Table 1: Results of Questionnaire - “Effects of Social Media and Excessive Phone Usage on High School and College Students”. P represents positively, while N represents negatively.
 - d. Do you feel social media affects the following? (Select all that apply)
 - a. Depression - 43 Respondents selected.
 - b. Anxiety - 44 Respondents selected.

- c. Low Self-Esteem - 58 Respondents selected.
- d. Body Image - 53 Respondents selected.
- e. Sleeping Problems - 59 Respondents selected.
- f. Social Isolation - 39 Respondents selected.
- g. Emotional Difficulties - 33 Respondents selected.
- h. None of the Above - 5 Respondents selected.
- e. Do you think you are addicted to your phone?
 - a. Yes: 48 Respondents.
 - b. No: 21 Respondents.
 - c. Unsure: 11 Respondents.
- f. How on a scale from 1–10, how much does excessive phone usage affect your life? How much does it distract you from what you are doing?
 - a. Data is shown in Table 1: Results of Questionnaire - “Effects of Social Media and Excessive Phone Usage on High School and College Students”.
- g. Does excessive phone usage negatively affect your grades?
 - a. Yes: 54 Respondents.
 - b. No: 26 Respondents.

USER	Gender	Daily Avg Screen Time (hours)	Top Three Apps	Pickups (Daily Average)	How Do You Feel?	Positive or Negative?	Are You Addicted?	Does SM Affect Life?	Does Phone Usage Affect Grades?
1	F	4	2	280	4	N	Y	7	Y
2	F	10	1	48	6	P	N	6	N
3	F	5.23	2	267	4	N	Y	7	N
4	F	5.52	2	130	4	N	Y	10	Y
5	F	11	1	99	1	N	Y	10	Y
6	N	4	3	171	5	N	Y	10	N
7	F	3.02	3	88	9	N	N	7	N
8	F	4	2	165	4	P	U	8	N
9	M	5	2	57	4	N	Y	7	Y
10	M	5.93	2	59	4	N	N	7	Y
11	M	7	2	101	1	N	Y	8	Y
12	F	8	2	280	5	N	U	8	Y
13	F	4	2	244	7	N	U	7	Y
14	M	12	1	18	3	P	N	4	Y
15	F	7	1	100	1	N	Y	4	N
16	F	2.32	1	123	8	N	N	6	N
17	F	6	3	203	2	P	Y	10	Y
18	M	6	3	403	5	P	U	7	N

(Continued)

USER	Gender	Daily Avg Screen Time (hours)	Top Three Apps	Pickups (Daily Average)	How Do You Feel?	Positive or Negative?	Are You Addicted?	Does SM Affect Life?	Does Phone Usage Affect Grades?
19	M	5.88	3	182	7	N	Y	3	N
20	F	9	3	186	6	P	Y	10	Y
21	F	8	3	201	4	N	Y	7	Y
22	F	8	3	173	1	N	N	5	Y
23	F	10	3	98	7	P	N	2	N
24	F	6	2	285	2	N	Y	8	Y
25	F	9	3	230	5	N	U	6	Y
26	F	7	3	142	4	N	N	4	N
27	F	2.86	3	224	1	N	U	8	N
28	F	7.53	2	272	1	P	Y	3	Y
29	F	11	3	430	1	N	Y	10	Y
30	F	6	1	203	7	P	Y	5	N
31	F	6	3	270	5	P	Y	6	N
32	F	2.15	3	80	10	P	N	6	Y
33	F	2.29	1	18	10	P	Y	10	Y
34	F	7	2	62	3	N	Y	7	Y
35	F	7	2	112	1	N	Y	8	Y
36	F	7.34	2	60	4	N	Y	10	Y
37	F	7	1	284	4	N	Y	10	Y
38	M	4	2	192	3	N	N	3	N
39	F	5.1	2	55	6	N	Y	8	Y
40	F	8	2	195	7	N	N	5	Y
41	F	4.45	2	94	4	N	N	5	Y
42	F	1.71	1	105	4	P	N	4	N
43	F	11	2	212	1	N	Y	10	Y
44	F	8	3	101	5	P	N	6	Y
45	M	1.86	2	102	10	P	Y	3	N
46	F	8.82	2	187	8	N	Y	7	Y
47	F	6.77	1	105	5	P	U	5	Y
48	M	7.3	2	99	4	N	Y	8	Y
49	F	6.93	1	198	4	N	N	5	Y
50	F	12	3	82	1	N	Y	4	Y
51	M	8.78	1	86	4	N	Y	5	N

(Continued)

USER	Gender	Daily Avg Screen Time (hours)	Top Three Apps	Pickups (Daily Average)	How Do You Feel?	Positive or Negative?	Are You Addicted?	Does SM Affect Life?	Does Phone Usage Affect Grades?
52	F	6.5	0	67	3	N	Y	7	Y
53	M	7.3	2	99	4	N	Y	8	Y
54	M	2.23	3	68	3	N	Y	7	Y
55	N	0.95	1	28	10	P	N	4	N
56	F	9.42	3	100	5	P	N	6	Y
57	F	5.72	2	77	2	N	U	10	Y
58	M	5.8	1	135	2	N	Y	6	Y
59	F	4	1	8	4	P	Y	8	Y
60	F	9.72	2	195	7	N	N	5	Y
61	F	8.82	2	187	3	N	Y	7	Y
62	F	7	3	200	4	N	U	9	Y
63	F	5	2	7	3	N	Y	8	Y
64	F	9	0	128	4	P	y	6	Y
65	M	5.8	1	135	2	N	Y	6	N
66	F	7	2	112	1	N	Y	8	Y
67	F	3.5	0	33	5	N	Y	5	N
68	F	7	2	200	4	N	U	9	Y
69	M	8	2	218	5	N	U	6	N
70	F	7.34	2	60	4	N	Y	10	Y
71	F	5.05	3	92	3	N	Y	9	Y
72	F	12	3	82	1	N	Y	4	N
73	F	2.18	2	40	8	N	N	4	N
74	M	12	2	113	1	N	Y	10	Y
75	F	11	3	95	7	P	Y	9	Y
76	F	4.29	1	55	1	N	Y	8	N
77	F	2.21	2	78	5	P	N	2	N
78	F	9.97	3	88	7	N	N	7	N
79	F	5	2	73	1	N	Y	10	Y
80	F	5.5	3	290	3	N	Y	9	Y