



A hand holding a smartphone is visible on the left side of the image. The background is a light blue surface with several white pills scattered across it. The pills are of various shapes, including round and oval, and some have markings on them. The overall scene suggests a connection between technology and health, specifically the use of substances like pills and the impact of smartphones on teenagers.

# Almost every teenager has a smartphone - it has changed the way that we interact, communicate, and even feel, but at what cost?

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**D**rugs and alcohol have been around for centuries, but researchers are only beginning to see the widespread implications of a generation of people dependent on something else entirely: cell phones. A staggering 88% of teenagers now have a mobile phone, effectively altering social landscapes, school environments, and communication forever. We are more connected than any other generation, yet more teens are suffering from depression and anxiety than ever before.

"I've seen a huge change in the time between students not having phones and now, where every student has one now. The youngest students have one now, even in the middle school play. It's gotten to the point where they literally do not experience the world around them. That little five or six inch screen has become their world. I see a difference in the way they interact with people. I see a difference in how they answer questions. I see a difference in their focus and also in their attention span. Attention spans are to the point of nanoseconds now, because you listen, but they're not looking," Erin Schneeweis, Communications teacher, said.

According to Psychology Today, addiction can be defined as a condition that results when a person ingests a substance (for example, alcohol, cocaine, nicotine) or engages in an activity (such as gambling, sex, shopping) that can be pleasurable, but the continuation of which becomes compulsive and interferes with ordinary responsibilities and concerns, such as work, relationships, or health. According to a CNN poll, a whopping 50% of teenagers consider themselves addicted to their phones. To some, and much like a more traditional 'addiction', the phone has become something that they turn to when they are feeling unwell.

"Phones are like a security blanket. If you feel awkward or if you don't know what to say, you just pull your phone out and go away completely. But these days, the people of our generation are so attached to their phones that they are missing out on the world around them. It's like people don't know how to socialize anymore," Morgan Shinall, senior, said.

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The modern student feels compelled to participate in social media, otherwise they'll feel like they're out of the loop. So I don't see it as narcissism, I see it as almost this new role-playing. It's not the new 'yay me', it's more of a 'I have to do this to stay relevant'. This is the new way to be social

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## The Screen to Screen Revolution

The lack of social skills that many are attesting to may stem from the rise of communication through a screen instead of face to face. Some use their phones to avert eyes in a hallway. Some to avoid speaking to others. Some to keep their minds occupied. No matter the reason that people are using their phones at higher rates than ever, many argue that there have been obvious changes to the way the millennial generation communicates with one another.

“When I was a teenager cell phones and texting were becoming more mainstream, and it wasn't like it is now, where there is always access to the internet. So everything we did was more in person. We would just text to meet up, and everyone would just be together, but social media didn't exist at the time, so we did everything without it.” Vincenzo Barchini, Vice Principal, said.

The impact of cell phones, however, is not all negative. Some feel that the phones have had an overall positive effect on communication. People, are in a sense, more connected than previous generations, and that connection may be translating to real-life friendships that could not have been possible in a pre-smartphone era.

“I think smartphones strengthen relationships because when you go away to college you can still talk to your friends. You can also have friends across the world. However, interacting not through a screen, and with no time to think out what you're going to say has made some people have issues talking to people in person,” Michelle Schwartz, senior, said.

The Pew Research Center reports that a quarter of young adults aged 13-17 years old go online “almost constantly”. Social media sites have quickly become the reason that many teens use their phones. Millions of young people choose to keep others updated on their lives through the means of Facebook, Instagram, Twitter, Snapchat, and other social media platforms.

“Especially with this generation, people decide that they want to be on their phones 24/7, and they're attached to it. They can't stay without their phones for long period of time,” Brianna Galofre, junior, said.

## Broadcasting Narcissism?

Social media sites allow users to practically journal their entire life on the Internet, should they choose to do so. The abundance of social media sites that have become more and more popular amongst the younger generation, have given millions of people a platform to share their lives. Friends, family, and even strangers now have an intimate look into your life. The content people share online can be personal, and not only does this pose a safety threat, it may also contribute to narcissism, which typically carries a negative connotation, as it in context implies that people are oversharing because they're obsessed with themselves.

“What I've seen more of is people sharing things that don't have any real value. They are saying happy birthday on Facebook to family members that don't have Facebook, they are creating YouTube channels to show off mundane aspects of their lives, they are posting “thoughts and prayers” and putting flags over their profile pictures as a sign of ‘caring’ - but do they really care? Do they know what happened? Or are they just saying, “hey, look at me, I care about things.” Every life event, no matter how irrelevant or boring, has become an opportunity for self-promotion. They are

actually paying for friends, or hashtagging #followforfollow, not because they know that person, or because they have something in common, but because it reaffirms their ego that they have x amount of friends. I think about the times that people tweet or comment about how sad they are over an event, personal, but often not...there is a difference between sharing sorrow in the 'old days', when you had to go to a wake or a funeral, it was personal, it was meaningful, it isn't the same to just tweet about it, that doesn't take any effort, and I wonder if people are just doing that to let others know that 'they're going through something'. There is no physical engagement, there is nothing quality behind it, and I have to wonder if even just a little bit of it is narcissism in the form of self-assurance," an anonymous staff member, said.

It is possible however, that selfie culture and tweeting about the mundane minutiae of life has just become part of youth culture. The trend in posting whatever comes to your mind may be more indicative of what adolescents consider to be commonplace, rather than it being rooted in the idea that people are becoming more inherently obsessed with themselves.

"The modern student feels compelled to participate in social media, otherwise they'll feel like they're out of the loop. So I don't see it as narcissism, I see it as almost this new role-playing. It's not the new 'yay me', it's more of a 'I have to do this to stay relevant'. This is the new way to be social," John Van Dam, English Teacher, said.

## Reality Check

Selfies may be the culture of young people, but many are quick to claim that this may not be a positive attribute to the millennial and forthcoming generations because it could be making people more critical of themselves than other generations that only had to contend with magazines and television, and movies.

"Although the advancements in technology and social media have its positives, there are a lot of negatives because it's being used as a platform where everything's made to look glamorous. Everything is magnified and that can negatively impact how young people feel about themselves and their bodies. Furthermore, it can unintentionally lead to feelings of insecurity, lack of confidence, lack of self-esteem. To combat this, I think that we need to do our job as a school, communicating with parents and educating kids on what's real versus what's not real. A lot of it is just built around marketing and advertising, but in reality, life's just not always like that," Barchini, said.

Social media has made access to celebrities as simple as a tap on a screen. It has had similar effects on everyday people. Some argue that looking into the lives of others has never been so easy.

"Everyone spends their whole entire life on Snapchat. I always know what everyone's doing. I know what they're eating, whose house they're at; I know if they're dying their hair," Delilah Morales, senior, said.

On the other hand, there are downsides to perpetually knowing what your friends are up to. It can make people stress about being left out, or missing out on all of the fun and amazing things their friends were enjoying without them.

"If your friends are hanging out without you, you always know," Tiffany Temes, senior, said.

While social media makes it possible to get a glimpse into the lives of others, it also enables the user to portray his or herself

anyway he or she would like to be seen, which can make people more self-conscious.

"You only post what you want people to see. Online, if you want to get a large following by doing what's popular," Shinal said.

Major media figures online also follow this trend. As of January, 2018 Selena Gomez has 132 million followers on Instagram. To put that in perspective, only 8.9 million people live in New Jersey. That's 132 million people -- generally younger people -- that see clear skin, toned stomach, and perfection, and may expect the same of themselves. Social media has an unparalleled ability to create an expectation of perfectionism. For every selfie a person takes, there could be a hundred that didn't make the cut, but you only see the one that did.

"Sometimes I get sad that the world is so superficial, and I see all these celebrities with a bunch of money, and we're down here. It annoys me. Without social media, it might be a little better," Morales, said.

Social media, which has become a multi-billion dollar industry, is quickly gaining the power to alter self perception, because users are able to present themselves in their most "perfect" state. The Telegraph reports that every third photo taken by someone aged 18 to 24 years old is a selfie. People are now starting to question whether the rise of selfies are making people more self-involved.

"Definitely, people now worry about self-image more than ever because of selfies," Sari, said.

However, while there are more selfies taken now than ever, not everyone believes that selfies had an overall adverse effect on people. Selfies have the potential to make people feel better about themselves. They can highlight attributes that people are confident in, and they can keep long distance friends up-to-date on what you look like.

"Selfies are definitely not making us obsessed with ourselves, it's part of a self-love movement. If you look good and you want to take a picture, you feel good about yourself. It's a positive thing. We need a little bit of selfishness about ourselves, because there's so much hate about how we look and how we feel, it's a positive, not a negative," Michelle Schwartz, senior, said.

## The New Communicator

Knowing that others practically are to some degree always knowing what you're doing, has pushed some people to spend hours on social media working to portray and maintain a persona that is considered to be favorable in the eyes of the user. Being the most followed or the person with the most like can even be stressful for some and can further alter the way we, as humans, communicate, potentially contributing to a lack of social skills, which has become increasingly apparent in the teenage population. Some lack the skills needed to hold a face-to-face conversation, due to how they are used to communicating by texting, Snapchatting, or Instagramming.

"You learn to not have to communicate directly with each other. You lose a personal connection. I have learnt now, with helping you guys apply for jobs or to colleges, it's frightening for some of you because you don't know how to interact or speak to an adult in that manner," Lindsay Gesell, Guidance Counselor, said.

# The Science Behind Addiction

Getting likes and comments on selfies is a good feeling for millions of people. That good feeling can be attributed to a chemical in the brain known as dopamine.

“Our generation of youth is posting photos or videos and they’re looking for a certain number of likes, because those likes almost mirror the effects of a drug high, where your brain is releasing dopamine, and it just feels good to get them,” Barchini said.

Dopamine is a neurotransmitter (chemical messenger in the brain) that sends messages throughout the body, regulating movement, ability to learn, communication and perhaps most relevantly, feelings and emotions. When feeling happy or doing something considered to be pleasurable, the brain releases dopamine so that the body can experience that pleasure.

“Dopamine has a huge role in the brain, its complexity is what makes it so influential because it has an effect almost everything we do ranging from simple movements to feelings of lust and love,” Lucille Green, nurse practitioner at the Hackensack Center for Revitalizing Psychiatry, said.

The release of dopamine can be triggered through activities like eating or having sex. On the other hand, ingesting addictive substances and smoking cigarettes can also cause a dopamine rush. Neuroscientist John Coates reveals in his bestseller, *The Hour Between Dog and Wolf*, that many potentially addictive substances— including caffeine, alcohol, sugar, drugs, — flood the brain with unnaturally high levels of dopamine. When these levels of dopamine exceed the natural level, it becomes too much for the body to handle, directly affecting the brain in a negative way. Under the spell of an excess of dopamine, you are also more likely to take risks and act impulsively.

“What happens is the constant exposure causes you to get that gratification and you continue doing that because it is something that is pleasurable. But what many people, especially adolescents, don’t seem to understand is that sooner or later, you will unintentionally go through any means necessary to feel that pleasure. It is the same as how a heroin addict looks for his next hit. You won’t be able to physically control it on your own and that will cause problems in the future,” Dr. Mini Thomas, MBBS CCRP, said.

When the brain naturally produces dopamine, the effects can be described as feeling a sort of high, comparable to the sort of high that certain drugs create. The person will feel a boost in happiness. When other substances such as drugs and alcohol are used to achieve that release of dopamine, the body stops making its own. This causes the body to become dependent on the drug, resulting in addiction.

And so, the posting, tweeting, constant communication, likes, comments, and shares are all playing a role in creating this new addition of our generation.

“What starts to happen is that you are so conditioned to hearing a tone or a ping, that you are built to respond to that ping. As time goes on, it becomes very difficult for the brain to selectively attend to whatever is going on without checking the phone. It becomes a real need,” Thomas, said.

The factors that stimulate unnatural levels of dopamine are not limited to tangible substances. Those that are perceptive to the other senses, such as sight, can also spike dopamine levels in the brain. According to a study of Australian consumers by San Francisco-based media-buying firm RadiumOne, social media

usage is a dopamine gold mine, “every time we post, share, ‘like,’ comment or send an invitation online, we are creating an expectation. We feel a sense of belonging and advance our concept of self through sharing.” The likes, retweets, and reposts are all responsible for triggering the release of dopamine, and this is what is causing the addiction. Teenagers cannot help but want to be on social media all the time, due to how it gives them an elevated feeling of pleasure.

“The negative part of it revolves around how deep that connection is when there’s no human conversation happening. We are actually finding that the brain is becoming re-wired to respond quickly to text messaging. So it’s changing everything. It’s changing our vocabulary, the way we think, and the way we speak, and neurological studies are showing we are changing the brain,” Bernstein, said.

What many fail to realize is that elevated levels of dopamine don’t just end with an unnatural feeling of pleasure. It leads to the release of other hormones and chemicals in the body, causing mental and physical health-related problems.

“People don’t realize its magnitude and that it could be a very dangerous component if not dealt with,” Bernstein, said.

Norepinephrine, another form of chemical messenger, is one of the major stress hormones that is stimulated in the brain as a result from high levels of dopamine. Normally, this neurotransmitter is released to regulate our “fight or flight response” in endangering situations, causing blood flow to move away from major organs and the heart rate to increase. However, unnatural levels of dopamine generates an excess of norepinephrine that is released directly into our bloodstream. This, in turn, causes a high concentration of the stress hormone in the body, leading to high levels of stress and anxiety. According to a study conducted by the American Psychological Association, teens are 14 percent more likely than adults to experience stress. With heightened levels of dopamine from addictive agents such as social media, affects amongst all age groups are imminent.

“If I’m not on my phone, I definitely get very stressed and anxious. It’s like separation anxiety. and I know that it’s totally ridiculous, but I just can’t go five minutes without my phone on me or in my hands. It’s terrible, and I wish I could control it, but I can’t,” Alexa Gonzalez, freshman, said.

## The Impact

Mental health has become an increasingly prevalent topic, as teen depression and anxiety levels have risen. The reality of how devices can destroy mental health is forcing many technology companies to ‘lawyer-up’ as parents have begun demanding action for the impact of their child’s self-esteem, body image, and self-worth. When you become depressed your body is not producing enough dopamine or serotonin to lift your mood, contributing to why depressed people feel like the happiness has been sucked out of the world. Cell phones have added to the growing problem by drawing adolescents in with an infinite amount of likes, retweets, and views. When robbed of all of this dopamine, the brain becomes confused and starts to produce less, manifesting into depression and anxiety. Also with the increase of people trying to attain this ‘perfect’ body and being ‘beautiful’, it lead many teenagers--especially teenage girls-- to develop eating disorders such as bulimia and anorexia to try to fit the status quo.

“In my time, it was on magazines, flyers, and newspapers; we would read about how it was the trend to be physically perfect, mentally perfect, and be flawless in any case. In every generation, this ideal concept of perfection is the same. Growing

up in my age, it was the typical Sports Illustrated models that we all wanted to be: 5'8", blonde hair and blue eyes... In reality, that is not the case. Personally, I like to think that every individual is flawed because that is what makes each and everyone of us an individual. However, through adolescents constant attachment to media today, that idea is skewed and it is important for people to realize that anything you see or anything that shows up on the screen is not a standard," Thomas, said.

Likewise, the brain and the body work cohesively to maintain an inner balance. When this balance is thrown off through addiction and stress, catastrophic effects to mental health follow. With time, the body starts to experience a state known as withdrawal, resulting from the sudden stop or drastic reduction of the substance that one is dependant on.

"Our brains are wired to become excited whenever we are given positive reinforcement. So getting a like or getting someone that viewed the video increases the serotonin and the dopamine levels in the brain. It also sets up the anticipation, 'oh good what can I do next to get that same feeling'. So that is the way that we condition ourselves to constantly look for that reinforcement. When we don't get it, we begin to feel a little depressed. It is somewhat like not getting a drug or not getting something that makes you feel good," Bernstein, said.

When your body enters withdrawal, physical symptoms such as drenching sweat, shaking, and insomnia can occur. As a result, it can bring about significant risks to one's health. Although the symptoms of drug withdrawal may be severe, technology withdrawal can, to an extent, occur as well.

"In a general sense, any advance in technology, I think, is good, but there is a limit to how much we involve it in our lives before it becomes a serious problem that negatively impact the body," Rei Vaka, senior, said.

Although social media can serve as a mood booster when a selfie gets "x" amount of likes or a comment was retweeted multiple times, the need for constant posting and keeping up with what's in may lead to stress for many teenagers. This stress can additionally branch into depression, anxiety, as well as other mental illnesses. According to a study published online by Computers in Human Behavior in December of 2016, the use of multiple social media platforms is more strongly associated with depression and anxiety among young adults than time spent online. This stress stems from the public expectation of perfectionism. The media portrays the perfect body, the perfect social life, the perfect lifestyle. These highly unattainable goals are streamlined, and millennials are instilled with a specific idea of what success is.

"Teenagers follow so many people that are picture perfect and seem like they have everything together, but that's because they are rich and famous and celebrities. I feel like you guys start to idolize the wrong individuals. Not that I want to say that it's unattainable, but to be Kim Kardashian at 16 years old, is unattainable, and not something that I want you to want to be," Gesell, said. The neverending search for perfection has caused an overwhelming drive, in teens, towards social media. The hunger for likes, favorites, comments, and retweets, maybe insatiable. However, until teens put down their phones and look up, there's no clear end in sight to the growing epidemic of self phone addiction.

"Limiting technology is unrealistic because that is what you have grown up with. That's what you've had your whole life, and it's never going anywhere. It's only going to grow, develop, and build because that's just the world we live in now. As wonderful as it can be, it's a double-edged sword, so again it comes to knowing and limiting yourself and prioritizing; also, it's trying not to overextend, get so caught up in the little things, and to put time into things that are important. Stress is always going to be there, social media is always going to be there, it's just knowing what works for you, and using that to develop and grow into maturity," Gesell, said.

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