



## III Effects of Mobile Phones and It's Prevention

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### ABSTRACT

Mobile Phones are become our part of life in day to day life and it has become a major source of communication means in the modern society. The use of mobile phones has been growing exponentially in recent years, especially after the emergence of smart devices. Smart phones are now our companions for work, social, leisure and even family life. However, excessive use can lead to problems of dependence, addiction and fear. Cell phones are constantly being improved by expanding upon their functionalities, which in turn increases the likelihood of overuse and addiction. According to the PEW Research Center, 67% of smart phone owners have admitted to checking their phone for calls or messages when their phone didn't vibrate or ring. This is one major sign of cell phone dependence and should serve as a warning to cell phone owners.

As we are living Digital World we really need to concentrate on mobile phone addiction to prevent further complications.

**KEY WORDS:** Mobile Phone, Nomophobia, Ill Effects, Prevention, Diagnosis

### INTRODUCTION

Smartphone addiction is a disorder involving compulsive overuse of the mobile devices, usually quantified as the number of times users access their devices and/or the total amount of time they are online over a specified period. Compulsive smart phone use is just one type of technology addiction. Phone addiction is the obsessive use of a smart phone. The behavioral addiction is often dubbed as "nomophobia," or the fear of being without a mobile device. There are over 3.8 billion smart phone users in the world.

Nomophobia represents the irrational fear of being without a mobile phone. The term was coined in 2009 in the UK and comes from the anglicism "nomophobia" ("no-mobile-phone-phobia").

The use of mobile phones has been growing exponentially in recent years, especially after the emergence of smart devices. Smart phones are now our companions for work, social, leisure and even family life. However, excessive use can lead to problems of dependence, addiction and fear.



Problematic smart phone use is proposed by some researchers to be a form of [psychological or behavioral dependence](#) on [cell phones](#), closely related to other forms of digital media overuse such as [social media addiction](#) or [internet addiction disorder](#). Other researchers have stated that terminology relating to [behavioral addictions](#) in regards to smart phone use can cause additional problems both in research and stigmatization of users, suggesting the term to evolve to problematic smart phone use. Problematic use can include preoccupation with mobile communication, excessive money or time spent on mobile phones, and use of mobile phones in socially or physically inappropriate situations such as driving an automobile. Increased use can also lead to adverse effects on relationships, mental or physical health, and ensues [anxiety](#) if separated from a mobile phone or sufficient signal. Preschool children and young adults are at highest risk for problematic smart phone use.

The use of smart phone significantly increased since the late 2000s. In 2019 conducts, global smart phone users penetrated in 41.5% of total population. Due to prolific technological advance, the smart phone overuse continued to be a major threat in Asian countries such as [China](#), with around 700 million users are registered in 2018. Digital media overuse is tangentially linked to ocular problems, especially in young age. It has been estimated that 49.8% (4.8 billion) of global population with digital media overuse would be affected with [myopia](#) by 2050.

Founded in current research on the adverse consequences of overusing technology, "mobile phone overuse" has been proposed as a subset of forms of "digital addiction", or "digital dependence", reflecting increasing trends of compulsive behavior amongst users of technological devices. Researchers have variously termed these behaviors "smart phone addiction" and "problematic smart phone use", as well as referring to use of non-smart phone mobile devices (cell phones). Forms of technology addiction have been considered as diagnoses since the mid 1990s.

Unrestrained use of technological devices may affect developmental, social, mental and physical well-being and result in symptoms akin to other behavioral addictions. However, the Diagnostic and Statistical Manual of Mental Disorders has not formally codified smart phone overuse as a diagnosis. Gaming disorder has been recognized in the International Classification of Diseases (ICD-11). Varied, changing recommendations are in part due to the lack of well established evidence or expert consensus, the differing emphasis of the classification manuals, as well as difficulties utilizing animal models for behavioral addictions.

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## NEGATIVE EFFECTS OF PHONE ADDICTION

Chronic phone use is a recently developed form of addiction. The American Psychiatric Association does not officially recognize the condition. Still, it is acknowledged as a [behavioral addiction](#) by many medical professionals and researchers worldwide. According to several studies, over time, the devoted use of smart phones can alter and negatively impact an individual much like gambling.

Phone addiction may lead to:

- Sleep deficit
- Lower concentration
- Creativity blocks
- Aggravated ADD
- Anxiety
- Reduced cognition
- Stress
- Loneliness
- Insecurity
- Impaired relationships
- Poor grades
- Psychological disorders

Chronic phone use can also cause other physical dysfunctions, like GABA (a neurotransmitter in the brain) dysfunction and a loss of grey matter in the brain, which are highly correlated to substance use disorders.

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## GABA DYSFUNCTION

Chronic phone overuse is proven to change reward circuits in the [brain chemically](#). One of the primary affected neurotransmitters is gamma-aminobutyric acid (GABA). GABA is an inhibitory neurotransmitter that produces a calming or euphoric effect. It can even control fear and anxiety. The inhibitor plays a significant role in addiction by rewarding substance use and reinforcing addictive behaviors.

Research shows that chronic phone use can increase or decrease GABA production. Disturbances to the GABA system are proven to be a warning sign of addiction. In a study by the Radiological Society of North America, heavy phone use was linked to an upsetting ratio of GABA to other neurotransmitters. When the teen test subjects received [cognitive behavioral therapy](#) (CBT) for the disorder, their brain chemistry reverted to a non-addicted ratio.

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## DECREASE IN GREY MATTER

Grey matter in the brain is connected to the part of the central nervous system responsible for enabling individuals to control movement, memory, and emotions. A recent study scanned participants' brains with a phone addiction and discovered a change in their brain's grey matter. According to the

researchers, the physical shape and size of their brains resembled that of drug users. Grey matter volume among people addicted to their phones diminished in critical areas, a condition similarly observed in people with a substance use disorder.

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## SIGNS AND SYMPTOMS OF PHONE ADDICTION

There is a fine line between healthy and compulsive mobile use. Depending too heavily on a device can lead to a mobile addiction. A scholarly journal published by the National Library of Medicine reports that 6.3% of the overall population is addicted to their smart phone. The pattern of abuse is greatest among those under 30, with an average of 16% of adolescents addicted. Though chronic phone use is prevalent, how can you distinguish between “normal” phone use and phone addiction?

Below are a few ways to discern if someone has signs and symptoms of a phone addiction:

- Lying about smart phone use.
- Loved ones expressing concern.
- Neglect or trouble completing duties at work, school, or home.
- More and more time using a phone.
- Checking peoples’ profiles repeatedly due to anxiety.
- Accidents or injury due to phone use.
- Working later to complete tasks.
- Weak or non-existent social life.
- Fear of missing out.
- Isolation from loved ones.
- A feeling of lack of connection.
- Angry or irritated if phone use is interrupted.
- Getting up at night to check a phone.
- Reaching for the phone the moment they are alone or bored.
- Phantom vibrations (thinking the phone buzzes when it doesn’t).
- Limiting phone use is difficult.
- Craving access to a smart phone or another device.

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## PHYSICAL EFFECTS OF ADDICTION



Overuse of your cell phone or smart phone can result in a number of different physical problems that may cause permanent damage or be difficult to treat, including:

- **Digital eye strain.**
  - The pain and discomfort associated with viewing a digital screen for over 2 hours.
  - Eyes begin to burn and itch.
  - Blurred vision.
  - Eye fatigue.
  - Digital Eye Strain can cause headaches.
- **Neck problems.**
  - Also known as “text neck,” which refers to neck pain resulting from looking down at cell phone or tablet for too long.
- **Increased illnesses** due to germs.
  - 1 in 6 cell phones has fecal matter on it.
  - E. coli bacteria, which can cause fever, vomiting, and diarrhea, are found on many phones.
  - Phones have been found to be contaminated with MRSA.
    - Causes painful abscesses.
    - Life-threatening infections in bones, joints, surgical wounds, bloodstream, heart valves, and lungs.
- **Car accidents.**
  - Many people believe that they can multitask and use their phones while driving, but this causes significant impairment and puts the driver and others on the road in danger.
  - Research has revealed that **texting and driving can be just as dangerous as drinking and driving.**
- **Male infertility.**
  - Preliminary studies have revealed that cell phone radiation may decrease sperm count, sperm motility and viability.

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## PSYCHOLOGICAL EFFECTS OF CELL PHONE ADDICTION

- **Sleep disturbances.**
  - Cell phone addiction has been linked to an increase in sleep disorders and fatigue in users.
  - Using your cell phone before bed increases the likelihood of insomnia.
    - Bright light may decrease sleep quality.
    - Smartphone use could increase amount of time it takes to fall asleep.
    - Light emitted from the cell phone may activate the brain.
- **Depression.**
- **Obsessive Compulsive Disorder.**
- **Relationship problems.**
  - Offline relationships may suffer as a result of neglect in favor of excessive cell phone and social media use.
- **Anxiety.**
  - Research has found that college students who use their cell phones the most are more likely to feel anxious during downtime.

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## DIAGNOSTIC CRITERIA FOR SMARTPHONE ADDICTION

Recent work by Lin, et al identified 6 behavioral criteria that had the highest diagnostic accuracy for the diagnosis of smart phone addiction:

1. Continued inability to resist the impulse to use the smart phone
2. Symptoms of dysphoria, anxiety, or irritability after a period of withdrawal from use

3. Using the smart phone for a period longer than intended
4. Persistent desire and/or unsuccessful attempts to quit or reduce smart phone use
5. Heightened attention to using or quitting smart phone use
6. Persistent smart phone use despite recurrent physical or psychological consequences

In addition, they identified 4 functional criteria:

1. Excessive use resulting in persistent or recurrent physical or psychological problems
2. Use in a physically hazardous situations (such as while driving or crossing the street) or situations that have other negative impacts on daily life
3. Use that impairs social relationships or performance at school or work
4. Use that is very time-consuming or causes significant distress

Diagnosis rests upon the presence of 3 or more main criteria plus 2 or more functional criteria, and in which addictive behavior is not associated with obsessive-compulsive disorder or bipolar disorder.

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## HOW TO BEAT AN ADDICTION TO CELL PHONES



### **1. Maintain Device Diversity**

Your smart phone is a technological marvel that can substitute books, newspapers, TV, gaming consoles, computers, and a multitude of other tools. While this vast functionality is a testament to human innovation, it's essential not to let our smart phones monopolize our attention entirely.

### **2. Diversify Your Activities**

Transitioning between various activities is not only beneficial for your brain and body, but it also ensures your attention isn't solely tied to your smart phone. Make your life more enriching by engaging in a variety of experiences, and keep your smart phone locked away during family dinners, or important meetings.

### **3. Set Screen Time Boundaries (and stick to them!)**

An excellent strategy to manage your smart phone usage is to limit your screen time and monitor how much you're using your phone across the day. Make a schedule and limit yourself to a couple of hours a day – you'll be surprised when you discover how much time you've actually been spending glued to your phone.

### **4. Disable Distractions**

Notifications can be incredibly tempting and disruptive. Consider disabling alerts to resist the urge to dive into endless scrolling sprees. If you're worried about missing out on important updates, start by simply turning off the sound.

Better still, while you're working, keep the phone out of your eye line. [Research](#) shows that simply having your phone on your desk by your side is enough to impact your concentration and productivity.

### **5. Establish Daily Phone-free Periods**

There are plenty of moments during the day when smart phone isn't necessary. Designate phone-free times, like during meals or family time, to reduce digital distractions and create healthier habits. You'll notice that your phone dependency lessens while you spend more quality time with loved ones.

### **6. Out of Sight, Out of Mind**

An effective strategy to reduce any smart phone addiction is to keep your device out of immediate reach. Place your device on mute, tuck it away in a drawer, or turn it off completely to avoid the constant distraction that it creates.

### **7. Use Digital Locks**

If you can't put your cell phone down with will power alone, Kidslox offers the ability to schedule times when your device is locked or shut down after your daily screen time limit is reached. This tool is not just helpful for children, but can also aid adults in breaking free from their digital dependencies too!

### **8. Keep the Bedroom Device-free**

[Research](#) tells us that smart phones are terrible for sleep. Keeping your cell within arm's reach while in bed can tempt you to check it before sleeping or right after waking up. It's also suggested that its presence in the bedroom can also disrupt your sleep quality due to notifications and the blue light that the device emits. Keeping your bedroom device-free can help in reducing your phone addiction and promoting better sleep hygiene.

### **9. Replace Bad Habits with Good Ones**

You're not going to be able to put the phone away if it's filling a boredom void. Consider making a list of some goals and achievements that you would love to fulfill and see how you might use the time you spend scrolling to meet them! It could be improving your reading, learning a language or brushing up on cooking skills.

### **10. Prioritize Real Interactions**

Engage more with the people around you instead of connecting with them solely through digital platforms. Embrace the beauty of face-to-face conversations and shared experiences. The more time you spend with the people you love without the distraction of your smart phone, the more fulfilled and happy you will feel.

### **11. Change Your Mindset**

The good news is, if you're reading this, you're already considering a positive shift in behaviour to benefit your emotional and physical wellbeing. A simple shift in mindset can significantly influence your relationship with your phone. Before reaching out for your device, ask yourself whether it's genuinely urgent or if it can wait. Are you feeding a growing cell phone addiction, or is it a really necessary use of your time?

Addictions, whether they're to alcohol, gambling or your smart phone often have the same root. The dopamine feedback loop that the problematic behavior creates can actually alter our brain chemistry, making it a physical as well as emotional dependency.

Recognize that addiction often surfaces when there are issues elsewhere in your life. Leading a fulfilling life, with effective coping mechanisms like good communication with loved ones, can significantly reduce the likelihood of developing any type of addiction. Therefore, the lasting solution to smart phone addiction isn't necessarily about the phone itself—it's about changing your priorities and investing more time in the people around you

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