

How do smartphones affect our sleep?

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Abstract

Do you own a smartphone? They are very useful and often we can't imagine life without them. But they could be harmful as well. For example, people can get addicted to smartphones. As with any other addiction, this can lead to various problems. So does it affect our sleep?

To find out, we asked 1,043 students to complete two questionnaires. This helped us determine how many of the students suffer from smartphone addiction. It also showed how many suffer from poor sleep. We found out that smartphone addiction is pretty common among young students. We also found a strong connection between smartphone addiction and poor sleep.

Introduction

Did you know that more than $\frac{3}{4}$ of all people in the USA own a **smartphone**? Smartphones are very convenient. They can help you navigate and connect you to other people anywhere in the world. You can take photos, play games or even study. But what are the downsides? On average people spend 4 hours a day using their phones. That's 1,460 hours a year – or 60 days round the clock! If we use smartphones too much, they can become harmful.

Smartphones may be addictive, and this may lead to **problematic use**. This is even more true for teenagers and young adults. People can lose interest in face-to-face contact. They can become anxious when their phones are not around. **Smartphone addiction** can also negatively affect students' school grades.

What about our sleep? Many studies have shown that **prolonged screen time** is bad for our sleep. It can make it hard to fall asleep and even harder to wake up in the morning. But is it different if you are actually addicted to your phone? Is that more of a problem for sleep than just spending time on your screen? This is what we wanted to find out.



More than half of the students in this study said they use their phones for at least four hours a day.

Photo: Kgbo

Methods

We asked 1,043 UK students aged between 18 and 30 to complete two questionnaires. The first questionnaire was about the students' smartphone use. You can see the questions in Table 1. This questionnaire checked whether the students are addicted to their smartphones or not. The second questionnaire assessed the quality of the students' sleep. It included questions such as:

- On an average weeknight, what time do you go to bed?
- How many hours do you usually sleep?
- What is the latest time you usually use your smartphone?

We then analyzed the data to find if there is an association between:

- smartphone addiction and sleep;
- smartphone addiction and some factors like age, ethnicity, or gender.

Table 1:
Smartphone use questionnaire.

Please check the statements that apply to you		Strongly disagree	Disagree	Weakly disagree	Weakly agree	Agree	Strongly agree
1	Missing planned work due to smartphone use	1	2	3	4	5	6
2	Having a hard time concentrating in class, while doing assignments, due to smartphone use	1	2	3	4	5	6
3	Feeling pain in the wrists or at the back of the neck while using a smartphone	1	2	3	4	5	6
4	Won't be able to stand not having a smartphone	1	2	3	4	5	6
5	Feeling impatient when I am not holding my smartphone	1	2	3	4	5	6
6	Having my smartphone on my mind even when I am not using it	1	2	3	4	5	6
7	I will never give up using my smartphone even when my daily life is already greatly affected by it	1	2	3	4	5	6
8	Constantly checking my smartphone so as not to miss conversations between other people	1	2	3	4	5	6
9	Using my smartphone longer than I had intended	1	2	3	4	5	6
10	The people around me tell me that I use my smartphone too much	1	2	3	4	5	6

Results

Around 39% of the students showed several signs of smartphone addiction. It was more prevalent among students under 21.

Prolonged use was strongly linked to addiction. About 54% of the students who used their smartphones for more than 5 hours a day suffered from addiction. Only 20% of those who used them for under 2 hours a day were addicted.

Smartphone use before bed is also an important factor. Addiction levels were:

- high among students who used their phones less than 30 minutes before bedtime;

- low among those who stopped using their phones more than an hour before bedtime.

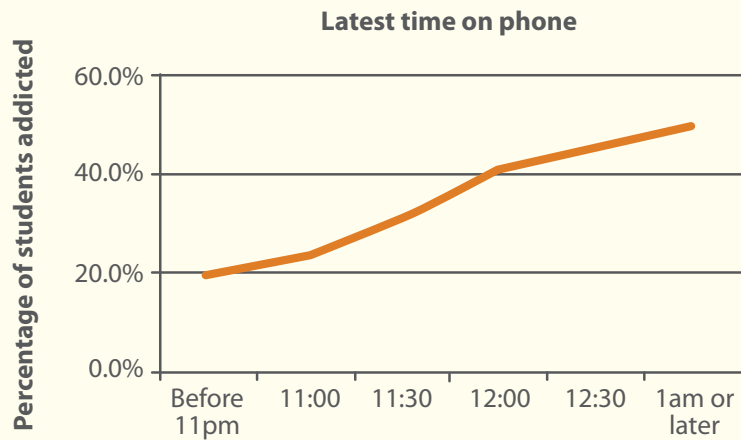
There is also an association between addiction and use in the late hours.

As we expected, smartphone addiction leads to poorer sleep. Almost 70% of the students who reported addiction also reported poor sleep.

**Please see
Figure 1 on Page 3**

Figure 1:
The relationship between smartphone addiction and late time usage.

What is the impact of late-night smartphone use on addiction?



Discussion

The levels of smartphone addiction among the participants are high. This is especially true for the younger group – students below 21. This might be because they have more free time. Or it could be because they are happy to use smartphones in different ways (for example, for social media).

There is a significant association between using your phone for longer and being addicted to it. But do people use their phones more because they are addicted? Or are they addicted because they use their phones more? It's hard to know.

There is also an association between addiction and using your phone late at night. For example, if you use your phone after 1 am, you are three times as likely to have an addiction. So the amount of time spent on your phone is not enough to suggest addiction. But combining that with the latest time you use your phone can be a good indicator.

Our study also shows that smartphone addiction could be harming people's sleep. And this is not just because of screen time. People could suffer from addiction and poor sleep even when they used their phones for under 2 hours a day. But use in the late hours or right before bedtime tended to harm the students' sleep.

Conclusion

If you have a smartphone, it could have a bad impact on your health. It's a good idea to track your own screen time to prevent future problems. It's also worth ditching your phone before you go to sleep, especially if you often feel sleepy during the day!

Even if you don't own a smartphone, there are other screens that can also be harmful. Try reducing the time you spend on screens – and see the positive effects!

REFERENCES

Sei Yon Sohn, Lauren Krasnoff, Philippa Rees, Nicola J. Kalk and Ben Carter (2021). *The Association Between Smartphone Addiction and Sleep: A UK Cross-Sectional Study of Young Adults*. Front Psychiatry.

<https://doi.org/10.3389/fpsy.2021.629407>

Kidshealth.org: How Much Sleep Do I Need?

<https://kidshealth.org/en/teens/how-much-sleep.html>

Psych Guides: Signs and Symptoms of Cell Phone Addiction

<https://www.psychguides.com/behavioral-disorders/cell-phone-addiction/signs-and-symptoms/>

Glossary of Key Terms

Prevalence – the proportion of a group of people (for example, students in a college) who have a specific characteristic (smartphone addiction) in a given period.

Screen time – the amount of time spent on devices with screens: smartphones, computers, TVs, etc.

Sleep quality – how well you are sleeping and how much your sleep restores your energy.

Smartphone – a mobile phone that you can also use as a computer and that has access to the internet.

Smartphone addiction – dependence on smartphones in a way that has negative effects on mental health. People usually lose interest in face-to-face interactions.

Check your understanding

1 What is a good indicator for smartphone addiction?

2 What smartphone activities are linked to poor sleep?

3 We mentioned some of the downsides of smartphones. Can you think of any others?

4 Do you own a smartphone?
If yes: How many hours a day do you think you use it? What would you do if you set aside your phone for the day?
If no: Do you want to have one? Why or why not? Are you afraid you might get addicted?

5 (Bonus) Answer the questions in Table 1 and calculate your score. A score above 33 indicates that you are showing several signs of phone addiction. Does your score surprise you? Do you want to change something?