

## COVID-19: Use of Internet for Studies and Internet Addiction

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### Abstract

Schools in 165 countries around the world have closed due to the Coronavirus outbreak, according to UNESCO. We know that maintaining close friendships reduces stress and help children navigate difficult developmental experiences, but with so many children now unable to socialize freely, children are spending more time online to maintain these vital relationships. The sudden shift to online education has meant that a nine-year-old student - Sunidhi has been given a smartphone “way ahead of schedule” – as her parent explained – mainly to attend LIVE ONLINE classes and also to help her to keep in touch with friends on WhatsApp and Facebook. These indeed are trying times for the children, for their education, their online safety and mental health. These are difficult times even for the parents and teachers, as they have to keep themselves safe and healthy (physically and mentally) while also caring for their children in a situation of health pandemic. This is a task which most of them have not done before. They are facing a situation to which they have never been exposed before. And to make the matters worse, even the solution providers – the experts in the domain of cyber safety and mental health are very few in number and most of these experts too are facing new situations. These experts too do not have readymade solutions as the problems are new and the nature and type of problems are changing by the day. This paper discusses the usage of the Internet for studies and to what extent it has a role in causing any behavioural disorder/addiction. The research based evidences indicate the following – Supplemented by finding from qualitative research, it was found that when the Internet is used mostly for Studies and in a structured manner, it does not lead to an uncontrolled and/or excessive use. There is no reported instance of causing “Tolerance” or “Withdrawal” or “Mood Modification or “Conflict” when Internet is used for Studies and Teaching-Learning. Unstructured use of the Internet can make them more vulnerable to gaming addiction, sexual exploitation, bullying, and internet addiction. Not all children are aware of the risks involved in online platforms and don’t have the required skills and knowledge to safeguard themselves. To prevent it, parents and children can work together construct rules for when, where, and how to use the internet. The most important thing is that parents should also practise what they preach.

**Keywords:** *Internet, Addiction, COVID-19 pandemic, Child safety, Online learning*

### Introduction

Just like 150 crore school children around the world, Malini, an 11-year-old middle school student in the DELHI-NCR area of India, has gotten used to going to school at home during the COVID-19 pandemic.

On every weekday, she wakes up slightly later than usual, at about 8:15 AM, turns on her laptop and quickly finishes her first online class of the day which begins at 8:30 AM, and goes to get breakfast at around 9:15 AM, to rush back to her laptop for the second class starting at 9:30 AM. Malini’s 6-year-old sister Nandini, who is in Grade 1, has an even more interesting story of attending school at home – she moves around the house with her mother’s smartphone while doing her online classes, to get space for herself within the house, to sing, dance and jump, as that’s what her class activities are mostly made of. She

has to do all this exercise in the house, which is a typical 3 bedroom-hall-kitchen arrangement that also has to accommodate the work from home activities of the children’s mother, and on some days the pre-office work that their father has to finish before he leaves for his office at 10:30 AM. After the morning rush and from the fourth or fifth online class of the elder child, there is calm at home. At this time, the children also engage in some other activities online such as visiting social networking sites and online gaming sites in order to counter their boredom.

Let us now look at the life experiences of Roshan, a 12-year-old middle school student in a small block town in the State of Bihar in India. His school teachers organise two online live classes on the Zoom video conferencing app every day, which he has to attend, along with six other students of his class that stay in his

neighbourhood, on a single Smartphone that has been arranged for this use by the local NGO working in the area. When the lockdown began in March 2020 due to the Covid-19 pandemic, it took three months for Roshan’s school to make this arrangement. Before that, him and his friends did not have access to the education imparted by his school. In the same small block town in the State of Bihar in India, a young 9-year-old girl, Sunidhi, got a new Smartphone all for herself with a high speed 4G data pack to attend online classes conducted by her school because Sunidhi’s father is financially well-off. Everything went well for two months, after which a problem cropped up – the young girl got hooked to online games and would not let go off her Smartphone at all.

Schools in 165 countries around the world have closed due to the Coronavirus outbreak, according to UNESCO. We know that maintaining close friendships reduces stress and helps children navigate difficult developmental experiences, however without the option to socialise freely, children are now spending more time online to maintain these vital relationships.

The sudden shift to online education has meant that a nine-year-old student, Sunidhi, has been given a smartphone “way ahead of schedule”, as her parent explained, to attend live online classes as well as to help her to keep in touch with friends on WhatsApp and Facebook.

These are trying times for children, for their education, their online safety and their mental health. These are also difficult times for parents and teachers, as they have to keep themselves safe and healthy (physically and mentally), while also caring for children in a pandemic. This is a task which most of them have not done before. They are facing a situation to which they have never been exposed to before. And to make matters worse, the solution providers like the experts in the domain of cyber safety and mental health are very few in number, and most of these experts are facing new situations as well. These experts do not have readymade solutions as the problems are new and the nature and type of these problems is changing by the day.

**Use of internet and related problems during time of a global health pandemic (COVID 19)**

This also raises an important question about online safety and problematic internet use: have students, especially those who are new to these

online tools, been informed about how to identify fake news when researching for school projects at home or to keep safe online or to use the internet based devices and applications in a manner that it does not become problematic or addictive?

Although Internet use is usually beneficial and advantageous for most people (Howard, Wilding & Guest, 2016; Heo et al. 2015; Roy & Ferguson, 2016; Wiederhold, 2017), the increased availability and high penetration rates across the globe can facilitate the emergence of excessive and addictive behaviors related to Internet use. Furthermore, many people appear to display impulsive, narcissistic and aggressive personalities online, which can be nurtured by various Internet technologies (Aboujaoude, 2017).

Looking at the statistics in Figures 1 and 2, Overview of Global Internet Use in January 2020 and July 2020, we can see that due to Covid-19, there has not been any significant increase in global internet users or the average amount of time per day spent using the internet by each internet user. But we all know that the aggregate statistics rarely tell the true story.

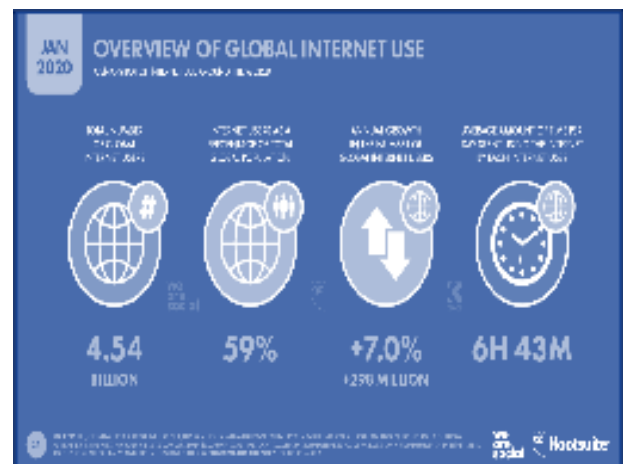
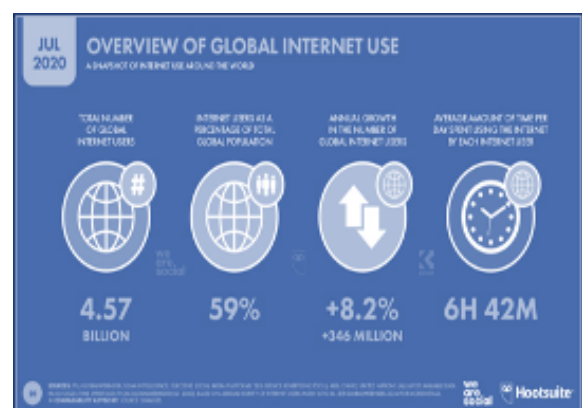


Figure 1: Overview of Global Internet Use (January 2020)



*Figure 2: Overview of Global Internet Use (July 2020)*

A study conducted by Jaipur-based JK Lone Children's Hospital has found that the lockdown restrictions, which were enforced from March 25 to contain the spread of the coronavirus disease (Covid-19) outbreak, have had an adverse impact on the physical, mental and emotional health of impressionable minds, resulting in an addiction to electronic devices, obesity, and an irritable behavioural pattern.

The study, which was conducted online across 30 Indian cities, has concluded that children's addiction to electronic devices during the lockdown increased up to three times, as they spend two to five hours a day on their favourite gadgets.

In another survey, conducted by Hammerkopf Consumer Survey that studied 1,300 people in Mumbai, Bengaluru, New Delhi and Chennai, the following information was found -

- i. Amid the lockdown, Indians have turned to social media to pass their time. In the first week of lockdown, Indians spent more than four hours every day on social media. This shows an 87 per cent increase from a week before lockdown.
- ii. Before the lockdown, social media usage was on average 150 minutes per day. However, in the first week of lockdown, the figures jumped to 280 minutes per day, as shown by the survey.
- iii. The survey added that 75 per cent people were spending more time on Facebook, Twitter and WhatsApp compared to the week before. In social media, people were largely consuming news and communicating with their friends and families as the country grappled with coronavirus.
- iv. Besides television, internet browsing and streaming platform have also seen a rise in viewership, according to the survey. Internet browsing saw a 72 per cent spike during the first week of lockdown.

In a research based article, "Prolonged use of Internet and gaming among treatment seekers

arising out of social restrictions related to COVID-19 pandemic", Susumu Higuchi, Satoko Mihara, Takashi Kitayuguchi, Haruka Miyakoshi, Madoka Ooi, Masaki Maezono, Kotaro Nishimura, and Takanobu Matsuzaki, (Department of Psychiatry, National Hospital Organization Kurihama Medical and Addiction Center, Yokosuka, Japan) wrote that empirical data showing an increase in Internet use due to social restrictions is scarce, with the exception of a small number of very recent studies.<sup>12</sup> This study explored the possible impact of these restrictions on Internet use and gaming behaviour among treatment seekers with gaming disorder (GD) or excessive use of Internet/gaming (EUIG). The latter are those who use the Internet or games excessively and have related problems but have not been diagnosed as having GD.

Participants numbered 80 treatment seekers with GD or EUIG who visited our centre between 16 May and 12 June 2020. Almost all were male (78/80), the mean age was 18.9 years (SD, 6.4 years; age range, 12–44 years), and about 70% were school students. Seventy percent of participants were diagnosed as having ICD-11 GD, 320% engaged in excessive gaming but were not diagnosed as having GD, and the remaining 10% engaged in excessive use of other online applications. Participants were asked about changes in Internet use and gaming behaviour and the level of functional impairment between February 2020 (pre-stay-home period) and the 30-day period prior to the survey (stay-home period). Internet use for study or work activities was excluded from internet time for the purpose of this study. Mean daily hours spent on the Internet, smartphones, online and offline gaming, and video viewing were significantly higher for the stay-home period compared to the pre-stay-home period (Fig. 3). This was especially true for Internet and smartphone use and online gaming. Time spent on the Internet had increased between the two periods for 71.3% of participants, and 52.5% reported an increase in time spent on smartphones and online gaming. The most common reason for these increases

<sup>1</sup> King DL, Delfabbro PH, Billieux J, Potenza MN. Problematic online gaming and the COVID-19 pandemic. *J. Behav. Addict.* 2020; 9: 184–186.

<sup>2</sup> Pal Singh Balhara Y, Kattula D, Singh S, Chukkali S, Bhargava R. Impact of lockdown following COVID-19 on the gaming behavior of college students. *Indian J. Public Health* 2020; 64(Suppl: S172–S176

<sup>3</sup> World Health Organization. ICD-11 for Mortality and Morbidity Statistics 2019, 2019. [Cited 12 June 2020.] Available from URL: <https://icd.who.int/browse11/l-m/en>

appeared to be ‘having extended free time to use the Internet and engage in gaming due to the stay-home measure.’ In cases where individuals had a high number of social withdrawal days in February, there tended to be a limited change in the time spent on the Internet between the pre- and stay-home periods. In fact, repeated-measures analysis of variance revealed that participants who were socially withdrawn for fewer than 20 days showed a significant increase in time spent on the Internet, but for those who were socially withdrawn for 20 days or more, the time spent was unchanged. ‘Social withdrawal’ is a state in which an individual stays at home, does not go to school or work, and has no direct contact with people other than the family.

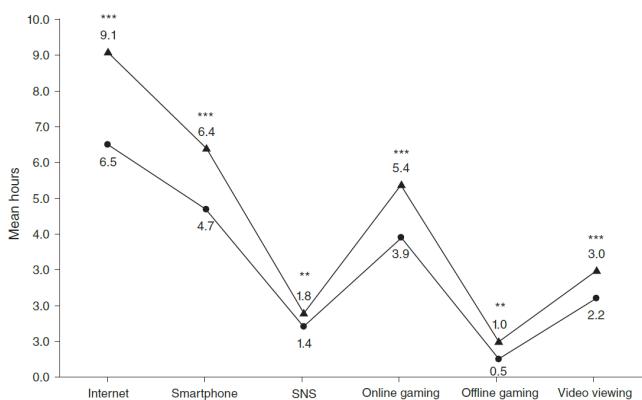


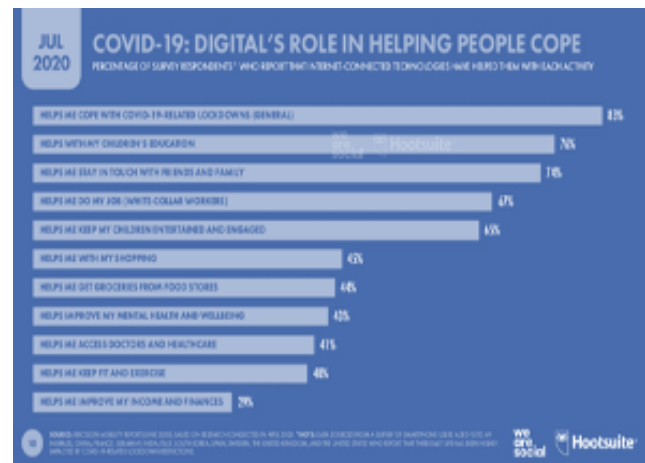
Fig.3: Average daily hours spent on the Internet, smartphone, social network sites (SNS), online gaming, offline gaming, and video viewing in ( ) February 2020 and ( ) the 30-day period prior to the survey (stay-home period). The majority of participants used different applications simultaneously and so the figures for time spent on SNS, online gaming, and video viewing did not sum up to the time spent on the Internet. \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

In an initial investigation on the relation between the COVID-19 pandemic and addictive behaviours in China, a total of 6416 valid questionnaires were collected (male/female: 47%/53%, age [mean  $\pm$  SD]: 28.23  $\pm$  9.23).<sup>4</sup> The respondents included 47% males and 53% females, and the respondents’ reported mean age was 28 years (SD = 9.2). A minority of responses were from Hubei ( $n = 330$ ), but these responses showed no demographic differences from the overall sample and were also too few to be allowed for separate analyses.

Among the 6416 participants, 46.8% (47.6% for males, 46.1% for females,  $\chi^2 = 1.8$ ,  $P = .41$ ) reported increased dependence on internet use (IAT score), and 16.6% (18.8% for males and 14.5% for females,  $\chi^2 = 28.84$ ,  $P < .001$ ) reported longer internet use time during the pandemic. 4.3% ( $n = 274$ ) (4.6% for male, 3.9% for female,  $\chi^2 = 1.96$ ,  $P = .16$ ) of the participants reported a severe internet addiction, which was 23% higher than the prevalence rate of severe internet addiction (3.5%) found before the COVID-19 pandemic (October 2019) among the 340 subjects (male/females 37.8%/62.2%, age 21.77  $\pm$  4.52 years). Among those who were severely addicted to internet use, their dependence degree (IAT score) rose 20 times more often than it declined (58.7% [ $n = 214$ ] vs 3.3% [ $n = 7$ ]).

However, it needs to be noted that internet and digital technologies and mediums have also been instrumental in helping people cope with the negative impacts of Covid-19 (Fig. 4).

Figure 4: COVID-19: Digital’s role in helping people cope



### Understanding the usage of internet for studies and its role in causing behavioural addiction

When properly used, internet is an important technology that provides people with vital skills for the 21<sup>st</sup> century such as information access, problem solving, and self-directed learning. However, when internet is used unconsciously, it can cause anxiety or fear and negatively affect personal development (Colwell & Kato, 2003; Kerberg, 2005). In addition, excessive use of internet may have detrimental effects on the biological, physiological, psychological and

<sup>4</sup> Yan Sun, Yangyang Li, Yanping Bao, Shiqiu Meng, Yankun Sun, Gunter Schumann, Thomas Kosten, John Strang, Lin Lu, and Jie Shi, Brief Report: Increased Addictive Internet and Substance Use Behavior During the COVID-19 Pandemic in China

social development of the user (Caplan, 2002). In this context, internet addiction<sup>5</sup> has gradually become a serious problem.

Studies have systematically shown that excessive use of the internet can lead to an internet addiction (Durkee et al. 2012; Pontes & Griffiths, 2016a; Pontes & Griffiths, 2017; Lortie & Guitton, 2013), which comprises a heterogeneous spectrum of internet-related activities with a potential to cause problems for the individual, such as gaming, shopping, gambling, or social networking.

However, when the internet-related activity involves teaching-learning, it has not been reported to cause an addiction. The Internet, by itself, is not addictive. It is the purpose or activity for which the Internet is used which is the causative factor for the behavioural addiction.

In many areas of behavioural addiction, it has been debated whether some extreme behaviors can really be regarded as an addiction or not. Griffiths (2013) made an important contribution to this discussion by suggesting six essential components to describe a behavior as addiction. These six components are salience, tolerance, mood modification, relapse, withdrawal, and conflict (Griffiths, 2013, p.121). He states that a behavior can be defined as addiction if it has these six components. Then, the critical question becomes what does each of these six components mean? To make the subject or issue more understandable, Griffiths (2013) explains these six components as follows –

*Salience:* This occurs when social networking becomes the single most important activity in a person's life and dominates his or her thinking, feelings, and behavior. For instance, even if people are not actually engaged in social networking, they will be constantly thinking about the next time that they will be.

*Mood modification:* This refers to the subjective experiences that people report as a consequence of social networking and can be seen as a coping strategy (i.e., they experience an arousing “buzz” or a “high” or, paradoxically, a tranquilizing feeling of “escape” or “numbing”).

*Tolerance:* This is the process whereby increasing amounts of social networking activity are required to achieve the former mood-modifying effects. This basically means that for people engaged in social networking, they gradually build up the amount of the time they spend social networking every day.

*Withdrawal symptoms:* These are the unpleasant feeling states and/or physical effects (e.g., the shakes, moodiness, irritability) that occur when people are unable to engage in social networking because they are ill, on vacation, prohibited etc.

*Conflict:* This refers to the conflicts between a person and those around that person (interpersonal), conflicts with other activities (social life, hobbies, and interests), or from within the individual himself or herself (intrapsychic conflict and/or subjective feelings of loss of control) that are concerned with spending too much time on social networking.

*Relapse:* This is the tendency or desire for repeated reversions to earlier patterns of excessive social networking to recur and for even the most extreme patterns typical of the height of excessive social networking to be quickly restored after periods of personal control.

Around the world, a number of studies have been conducted on whether the internet and its applications are addictive or not. In a recent study, Ajay Kumar Sinha et al, Online Safety and Internet Addiction, A Study Conducted Among Adolescents in Delhi-NCR<sup>6</sup>, the role of the internet, its prevalence and associated factors were discussed in detail.

The study found that children do take help of internet in studies, but only 40 percent of them take such help in more than two ways, and only 26.2 percent of them take such help in more than three ways.

Among the boys, 44 percent take help of internet for studies in more than two ways, and 29.5 percent take help in more than three ways. Among the girls, the incidences of taking help of internet in studies is much lower as only 32.6 percent of them take help in more than two

<sup>5</sup> Internet addiction has been defined as “excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and Internet access that lead to impairment or distress” (Weinstein & Lejoyeux, 2010, p277).

<sup>6</sup> Ajay Kumar Sinha et al, Online Safety and Internet Addiction, A Study Conducted Among Adolescents in Delhi-NCR, CRY, FLAIR, February 2020

ways, and only 19.9 percent in more than three ways. See Figure 5.

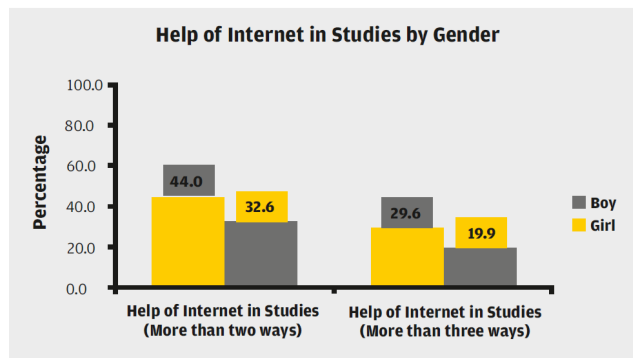


Figure 5: Help of internet in studies (by gender)

Following were the options for help of Internet in studies –

1. Online search for words, information etc.
2. Group discussion among friends online
3. Connected to school online education programme
4. Online tutorials (like Byjus, Cue math, Extra marks etc.)
5. Online books/Apps for various Olympiads and other competitive tests accessed free of cost
6. Online Books/Apps for various Olympiads and other competitive tests accessed on payment

Studying the effects of internet usage patterns and its socio-demographic factors on children taking help of internet in studies, it was found that the likelihood of children taking help of internet in their studies increases with the following factors –

1. When the Internet usage is more 4 hours daily;
2. When the child has their own room at home;
3. When the child has their own mobile;
4. When the child has their own mobile, their own room, and uses the internet for more than 3 hours daily, then 71.4 percent of the children take help of internet in studies;
5. The likelihood of children taking help of the internet in studies reduces considerably when both the parents are unavailable at home for monitoring and supervision (38.4%), and increases to 40.3% when at least one parent is available at home

Qualitative research found that when the internet is used mostly for studying and in a structured manner, it does not lead to an uncontrolled and/or excessive use. There is no reported instance of “tolerance” or “withdrawal” or “mood modification or “conflict” being caused by the internet, when it is used for studies and teaching-learning.

Unstructured use of the internet can make children more vulnerable to suffering from gaming addiction, sexual exploitation, bullying, and internet addiction. Not all children are aware of the risks involved in online platforms and do not have the required skills and knowledge to safeguard themselves. To prevent this, parents and children can work together and construct rules for when, where, and how to use the internet. The most important factor is that parents should set an example by practicing what they preach.

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