

Addictions and dependencies in the digital agora: From Neurosciences towards healthy communication

Adicciones y dependencias en el ágora digital: Desde las Neurociencias hacia una saludable comunicación

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Dear Editor,

Inserted in the maelstrom of the Fifth Industrial Revolution and still very close to the recent COVID-19 pandemic, a global crisis that affected humanity in different dimensions, we are faced with other problems associated with distortions of an authentic personal encounter and with how we relate to technology¹. During the pandemic, an increase in the use of virtual platforms for educational, work or entertainment purposes was observed, a situation that further strengthened nomophobia (*irrational discomfort due to not having a mobile phone*)¹ and phubbing (*ignoring others and the environment for concentrating on mobile technology*) (**Figure 1A**), pathologies that have been previously described in this Journal². This Letter to the Editor aims to comment on addictions and dependencies in a digital scenario that has been exacerbated in recent years, proposing a reflection from Neurosciences to healthy communication that should characterise human relationships.

In an interesting article on the relationship between digital addiction and sleep, Dresch-Langley and Hutt³ remind us of dopamine's relevant role in the pleasure circuit and the importance of serotonin in synchronising biological rhythms. A deficit in both neurotransmitters would be related to symptoms

of addiction and asynchrony in circadian cycles (**Figure 1B**), which would explain insomnia, anxiety and depressive symptoms in people deprived of the stimulation of digital screens³. The above is particularly worrying among girls, boys and adolescents—who spend more and more time on the Internet and go to bed later during the work week and on weekends—given that brain plasticity mechanisms are very sensitive to external stimuli in these age groups. Digital addiction is also present in work and educational contexts in adults. A recent investigation⁴ carried out in Turkey, which included 429 university nursing students, found that digital addiction was common amongst them, influencing sleep disturbance. Furthermore, the most significant effect was observed among nursing students who were men and had low academic performance⁴. Furthermore, students from lower family incomes were more likely to have higher levels of sleep disorders compared to those from higher-income families⁴.

Connected to those antecedents, in his Guide to Surviving the Present (2019)⁵, Santiago Bilinkis warns about the implications towards dependence on digital devices: “Driven by an essential characteristic of how the internet works today,

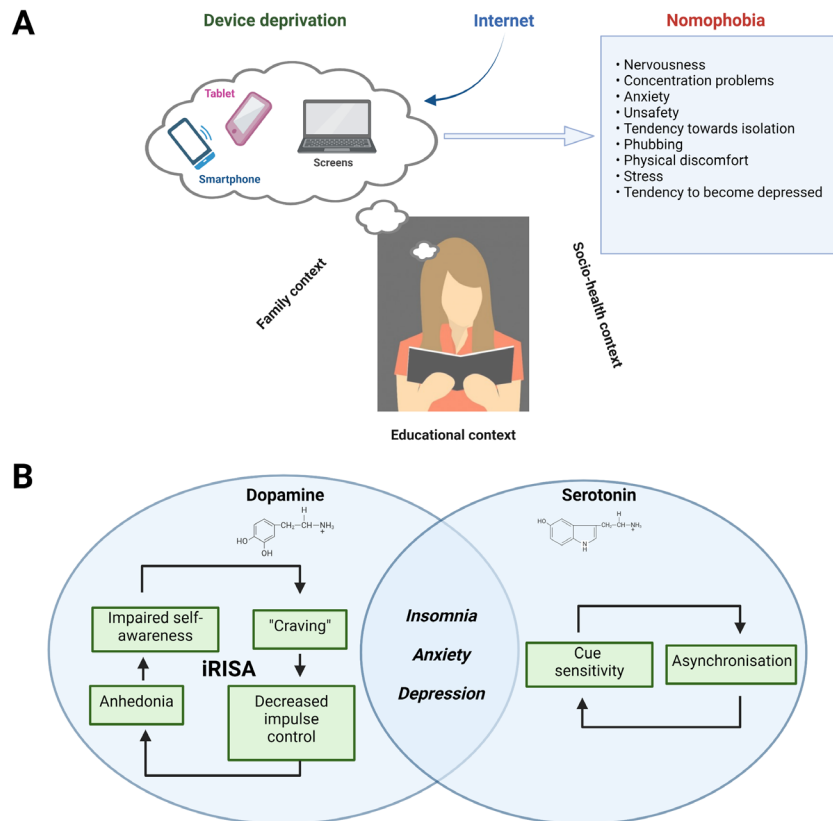


Figure 1. Impacts of dependence on digital stimuli. A. Main effects of nomophobia. B. Relationships between alterations in serotonin and dopamine levels and their role in the impaired response inhibition and salience attribution syndrome (iRISA) in the context of digital addiction. Source: Figure reconceptualised and redrawn from Cortés and Herrera-Aliaga and Dresch-Langley and Hutt3. Created with BioRender.com

the delivery of free services [requires] I change your attention and your personal information”, i.e., our time at the service of cyberspace. It was Giovanni Sartori⁶ who proposed the figure of Homo videns as a transformation of Homo sapiens from written culture to the triumph of the image. “Everything ends up being visualised”⁶ —said this Italian intellectual, along with projecting a society permanently connected to the Internet. It is a virtual scenario in which we quickly identify the convergence of three areas that compete for control over screen users: Security, entertainment and consumption. The prison panopticon described by the philosopher Michel Foucault, a faithful reflection of his proposal for a disciplinary society and biopolitical power, appears today as a digital panopticon supported by electronic devices. The big brother installed by George Orwell in his work *Nineteen Eighty-Four* (1949) would be very proud today. Thus emerges an information society, as highlighted by the South Korean Byung-Chul Han,

in which “...the smartphone is proving to be an effective informant that subjects us to constant surveillance. The smartphone transforms the entire home into a digital prison that meticulously records our daily lives.”⁷ So, should we only worry about a possible addiction to the use of digital screens? Electronic abuse also involves connecting to the Internet. Dependency requires the various digital platforms, authentic public squares, i.e., our “digital agora.” If screens dissipate distances and allow interactivity accentuation, are we socially captured by digital devices? Participation requires wills associated with the digital world. We need technological devices to feel part of an interactive and artificially connected society. Even today, we can talk about devices that are easy to use and economically accessible, e.g., computers, tablets and mobile phones, but not necessarily mass digital literacy. The French intellectual Guy Debord warned in *The Society of the Spectacle* (1967) that “...the entire life of societies in which modern

production conditions prevail is announced as an immense accumulation of spectacles,” i.e., everything is part of a representation. He added that in the breadth of its various particular forms—information or propaganda, advertising or direct consumption of entertainment—the spectacle constitutes the current model of life that dominates society.

What type of quality, then, do our human relationships acquire when we turn to screens and digital interactions as a new social scenario? There are increasingly more possibilities of access and connectivity to the platforms that offer us to satisfy needs. Here, we see expectations that fly the flags of what is possible and achievable, regardless of the apparent obstacles and limitations that the “goddess Technology” and her army of loyal electronic devices offer to solve. But what about human sensitivity, with its emotions, astonishments and mistakes? Or will algorithms and big data be our new leaders to follow? Han⁷ already ventured on this: “Influencers, as inducers or motivators, appear as saviours. Followers, like disciples, participate in their lives by purchasing the products influencers say they consume in their staged daily

lives. In this way, followers participate in a digital Eucharist. Social media is like a Church: the like is the amen. Sharing is communion. Consumption is redemption”. Given the excessive digital stimuli, the consequence is a reduced ability to concentrate and understand the environment. Likewise, as Bilinkis⁵ defines, the fear of being outside, since “...one of the great deprivations of freedom that a detained person currently suffers is being isolated from the world due to not being able to have access to a mobile phone.” Furthermore, as Han⁷ concludes, in the information society, “...being free does not mean acting, but clicking, liking, and posting.” Regarding Plato’s allegory of the cave, he even warns that “today we live imprisoned in a digital cave, even though we believe we are free. We then find ourselves chained to the digital screen.”

In light of everything described, a recommendation, as proposed by Bilinkis⁵: It is undoubtedly necessary to recover some of our ability to be indeed “present” in the place where we are, i.e., focused on what we are doing and genuinely connected with those we are with us, sharing in every moment, in every situation.

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