



Network addiction and nomophobia in youth. Social, educational aspects and their incidence

Adicción a las redes y nomofobia en jóvenes. Aspectos sociales, educativos y su incidencia

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Abstract

This study analyzes the presence and characteristics of nomophobia in high school and university students at the University of Guadalajara. The research is framed within a quantitative approach, through the application of the NMP-Q questionnaire to a sample of 776 students during the 2024 B calendar. The results indicate a general prevalence of nomophobia in moderate degree, with a mean of 77 points on the test scale, being slightly higher among females and young people of both genres aged 17 and 18 years. Minimal differences were identified according to educational level, region or employment status, although certain factors, such as the type and edition of device (mainly iPhone) and isolated cases of poor academic performance, showed a greater association with high levels of nomophobia. The main functions of the cell phone were the use of social networks, calls and consumption of multimedia content. It is concluded that nomophobia is a widespread phenomenon among young people, with relevant educational and social implications, which requires institutional attention and psychological support, due to the addictive behaviors that can occur when trying to stay connected to mobile devices. Future research on psychosocial factors associated with problematic cell phone use, the social context of those with high levels of nomophobia, and the creation of effective prevention policies and norms should be further investigated.

Keywords: nomophobia, adolescents, high school students, smartphone use, social media addiction, digital dependence.

Resumen

Este estudio analiza la presencia y características de la nomofobia en estudiantes de bachillerato y universitarios de la Universidad de Guadalajara. La investigación se enmarca en un enfoque cuantitativo, mediante la aplicación del cuestionario NMP-Q a una muestra de 776 estudiantes durante el calendario 2024 B. Los resultados indican una prevalencia general de nomofobia en grado moderado, con una media de 77 puntos en la escala del test, siendo ligeramente mayor entre mujeres y jóvenes de ambos sexos de 17 y 18 años. Se identificaron diferencias mínimas según el nivel educativo, la región o la situación laboral. Aunque factores como el modelo del tipo de dispositivo (principalmente iPhone) y casos aislados de bajo rendimiento académico, mostraron mayor asociación con niveles elevados de nomofobia. Las principales funciones del celular fueron el uso de redes sociales, llamadas y consumo de contenido multimedia. Se concluye que la nomofobia es un fenómeno extendido entre los jóvenes, con implicaciones educativas y sociales relevantes, que requiere atención institucional y acompañamiento psicológico, debido a las conductas adictivas que pueden presentarse al tratar de permanecer conectado a los dispositivos móviles. Asimismo, se sugiere profundizar en investigaciones futuras sobre los factores psicosociales asociados al uso problemático del celular, el contexto social de quienes tienen niveles altos de nomofobia y la formulación de políticas y normas efectivas de prevención.

Palabras clave: nomofobia, adolescentes, estudiantes de bachillerato, uso del smartphone, adicción a redes sociales, dependencia digital.

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1. Introduction

In recent years, nomophobia has become an emerging topic of interest. In 2008, the English term *nomophobia* began to be used in relation to the excessive use of cell phones and the dependence they generate. The term is derived from the phrase “*no mobile phone phobia*” and was later translated into Spanish (Notara et al., 2021). Addiction can lead to a loss of control and dependence (Echeburúa and De Corral, 2010) and can cause anxiety (Oxford English Dictionary, 2025, and Rodríguez García et al., 2025).

Among the aspects that characterize it, the most notable is the apprehension individuals feel when separated from their cell phone, leading them to seek proximity to the device. Some of the habits of people suffering from this disorder are: excessive use of the device, avoiding areas where cell phone use is limited, always carrying chargers with them, owning a second device, keeping the device close by while sleeping, using it late at night, getting lost in messages or posts on social media, and checking it immediately upon waking up (Vagka et al., 2023). These aspects are compounded by the feeling and fear of missing out on something important that is reported on social media (Moore and Craciun, 2021).

With the bombardment of posts and content, users are forced to be connected to apps and social media most of the time so as not to miss anything new. In addition, social media, online games, and gambling sites are designed to generate an addiction that depends on the production of dopamine.

This chemical produced by the brain is also referred to as the “pleasure substance” because it can act as a reward (Lembke, 2023) that the body gives to stimuli received or experiences lived from the outside (Bermejo et al., 2010).

The addictive power of dopamine lies in the fact that, after each stimulus, the body demands increasing frequency or intensity to produce the same amount of the substance (Carr, 2011).

Eventually, in extreme cases, the lack of stimuli and the resulting low production of dopamine can lead to depression. Particularly in gambling addiction, there is a lack of dopamine control, which manifests itself in a lack of sensitivity to risk, increased impulsivity, and lack of self-control (Bermejo et al., 2010). In addition, individuals may experience

nervousness, anxiety, or discomfort when deprived of the device (Cortés and Herrera, 2022).

In schools and universities, nomophobia could have harmful effects on learning or educational coexistence. These range from a lack of control in the use of mobile devices or distraction to violent events related to cyberbullying or learning deficiencies.

1.2 Justification

The above reveals a risk in the university environment when considering the growing use of devices in Mexico and the type of use. The MX Internet Association reports that in 2024, connectivity in socioeconomic sectors C and D grew due to easier access to connections and the purchase of devices. In addition, 76% of the population now has access to data telephony, which, combined with the availability of Wi-Fi, means that a large part of the population has access to the internet most of the time. According to data from the National Institute of Statistics and Geography (INEGI), 81.7% of the population in Mexico has a cell phone, a significant increase compared to 2015 when the percentage was 71.4% (INEGI, 2025).

Similarly, the activities that Mexicans most frequently engage in online are sending messages (88%), work-related activities (80%), and accessing social media (79%). Cell phones are the preferred tool for connecting to the internet (and, therefore, for communication), with 97% of users surveyed (Statista, 2023). Similarly, INEGI (2025) recorded that internet users connected in order of frequency: to communicate (93%), access social networks (90.4%), and for entertainment activities (89%); followed by activities related to education, such as searching for information (88.2%) and supporting training or education (81.3%).

On the other hand, the National Survey on the Availability and Use of Information Technologies in Households (INEGI, 2024) reported that the majority of internet users were young people aged 18 to 24, and Jalisco (the territory of reference in this research) is one of the states with the highest percentage of internet users (89.7%).

In addition, in 2024, the survey documented that the average number of hours of internet use reached 4.4, although in the case of people aged 18 to 24

and 25 to 34, it rose to 5.7 and 5.6 hours, respectively (INEGI, 2025).

Even in this context, there are few studies that delve into the consequences or effects of nomophobia in the school and university environments. An empirical basis for the presence or absence of nomophobia among students will allow us to investigate the qualitative aspects that influence it and to generate proposals to dispel the effects of this addiction.

1.3 Objectives

To determine the level of nomophobia among young students in middle and high school and at the University of NN. A secondary objective is to measure the dependence and type of use that university students have on their mobile devices.

2. Method

The research was conducted using a mixed qualitative-quantitative approach. From a quantitative perspective, the aim is to access a more concrete materiality of the research (López-Roldán and Fachelli, 2015) and describe numerical distributions of the variables among the participants (Jansen, 2012). From a qualitative perspective, the aim is to determine the diversity of the phenomenon studied, nomophobia, among students.

2.1 Participants

The study population consisted of students at the University of Guadalajara who were enrolled in upper secondary education (high school) or a bachelor's degree program at this institution. Data collection was carried out during the second semester of 2024 at two university centers and high schools located in the cities of Guadalajara and Colotlán, Jalisco, using non-probabilistic convenience sampling. A total of 776 responses were obtained.

2.2 Techniques and instruments

A cross-sectional survey technique was used, with data obtained at a single point in time rather than over a prolonged period (Creswell, 2003). Specifically, the instrument called the Nomophobia Questionnaire (NMP-Q) was used, developed by

Yildirim and Correia (2015) and validated in different studies and for different languages (Gutiérrez et al., 2016). It consists of 20 questions, to which some additional questions related to the academic status and availability of cell phones among young people were added.

The established concepts were translated into units and variables to obtain explicit data, allowing for the identification of concrete and operational empirical references, i.e., indicative, observable, and concrete manifestations (López-Roldán and Fachelli, 2015).

In this way, an attempt was made to extend the measurement of the degree of nomophobia to the knowledge of other particular characteristics that could be associated with the use of technology.

2.3 Data analysis techniques

To rate the responses, the NMP-Q uses a 7-point Likert scale, where 1 indicates complete disagreement and 7 indicates complete agreement. Thus, considering the 20 questions, the score ranges from 20 to 140, where less than 20 indicates no nomophobia; 21 to 59, mild; 60 to 99, moderate; and 100 or more indicates a high presence. Based on this, a thematic content analysis will be performed to distinguish the presence and behaviors related to the key topic of the study, and a semantic analysis will be performed to observe the relationships between the topics addressed in the responses (Andréu, 2002).

3. Results

First, some social and academic characteristics of youth consulted are described. Of the total number of participants, 61.9% of respondents are female and 38.1% are male. In terms of age, they are distributed as follows: 18 (35.6%), 17 (27.7%), 19 (10.2%), 20 (7.2%), and 21 (5.9%); other ages appear with minority data (up to over 30 years old).

It is interesting to note that 75.3% purchased a new cell phone and 24.7% purchased a used one. In terms of how long they have had the same device, most of them are new devices, as 38% indicated that they have had it for between one and two years, 33.2% for less than a year, 17.1% for between two and three years, and 6.4% for between three and four years. In terms of cell phone features, there is a

preference for the iPhone brand (43.8%), followed by Samsung (19.2%).

The pressure to obtain a trendy device may be rooted in technological, emotional, and quality issues, as it becomes an aspirational desire to have a new or recent phone. The built-in camera for taking

photos, the speed of the device, and the memory capacity are key factors in making these decisions.

Regarding the main functions of the device, respondents were allowed to give three answers, resulting in 637 mentions for social media use, 567 for calls, 547 for listening to music and watching videos, and 414 for instant messaging.

Table 1. *NMP-Q test results by gender*

Variable	Category	Mean of test
Gender	Women	80
	Men	71

Regarding the test results, the average score was 77 points, the median was 76, and the mode was also 76, with a standard deviation of 25.2. These data clearly indicate a concentration of responses within the moderate nomophobia category, according to the ranges mentioned above. However, the simple fact that there is a constant average presence is already revealing because it generalizes an induced condition.

One of the notable differences in the results occurred between the sexes, as women scored an average of 80 points and men 71. This significant difference stems from the differences in consumption, use, and purposes that each has for mobile devices, not only in individual terms, but also in social and cultural terms.

Table 2. *NMP-Q test results by age*

Variable	Category	Mean of test	Other statistics relevant
Overall results	Total sample	77	Median = 76. Mode = 76. Standard deviation = 25.2
	17	77	Q1 = 56. Q3 = 95.5
Age	18	78	Q1 = 63. Q3 = 96
	17-24	70-80	—

In terms of age, most respondents are between 17 and 18 years old (63.2%), and their average level of nomophobia in the test was 77 and 78, respectively. For those aged 17, the data ranges from 56 points in quartile 1 to 95.5 in quartile 3; for those aged 18, it ranges from 63 to 96 points. This again

results in the data being grouped in the moderate range of nomophobia. Between the ages of 17 and 24, the average is between 70 and 80 points (moderate), with data outside this range only occurring at ages 25, 26, 27, and 29; however, these are a minority of cases (19 students).

Table 3. *Relationship between academic average and level of nomophobia*

Academic Grade point average	Percentage of the sample	Average of test	Level of nomophobia
95-100	19,9 %	74-79	Moderate
90-94	29,3 %	74-79	Moderate
85-89	22,2 %	74-79	Moderate
Subtotal	71,4 %	—	—
65-69	Isolated cases (n = 4)	109	Severe

Their average grades do not reflect a noticeable impact on the test. The most common average grade among students is between 90 and 94 (29.3%), followed by those with grades between 85 and 89 (22.2%) and between 95 and 100 (19.9%), which together account for 71.4% of respondents. Their average test score ranges between 74 and 79 points. The particular case of students with an average grade between 65 and 69 is especially relevant because their result is 109 (severe nomophobia); although there are only four cases, it is striking because the score is significantly higher than the rest, and it would be worthwhile to explore these situations of students with this level of performance in future research.

The employment factor has a minimal impact. Fifty-five percent of respondents do not work and 45% do; although the difference is small, those who do not work scored 78 points and those who do work scored 75 points. Although the difference is small, it is worth investigating whether this may be due to the occupations that keep them active, although, at the same time, cell phones may be a tool used in their work and for communication with others and, for that reason, be a necessary tool.

Another noteworthy finding is the result regarding the type of cell phone. As mentioned previously, most have iPhones, whose users scored an average of 81 points on the test; next are Samsung cell phones, with an average score of 73 points among their users. It would be worth exploring whether the range of applications available on each cell phone brand may influence the time and manner of use. A device with cutting-edge technology, such as a camera with better resolution for taking photos, encourages users to use it more and share the results on social media or send them to friends and family, thereby spending more time online.

A valuable feature of the NMP-Q is that it is divided into four broad areas related to mobile device use: 1) Not being able to access information (four questions), i.e., losing immediate access to information and searching for what you want at the moment; 2) Giving up comfort (five questions), i.e., feelings about the comfort and psychological peace of mind of having control over one's cell phone (especially battery, coverage, and balance); 3) Not being able to communicate (six questions), understood as feelings about the loss of immediate communication; and 4)

Loss of connection (five questions), emotions linked to the lack of ubiquity due to connectivity.

According to the study's results, considering each area separately on a scale of 1 to 7, the highest scores were for not being able to access information (item one, with 4.35) and feelings about the loss of immediate communication and not being able to use services (item three, with 4.2); the lowest was emotions linked to the loss of ubiquity after losing connectivity (item four, with 2.9).

"Information" is a broad category that can include keeping up to date with trends or posts on social media or researching specific topics, while communication involves keeping in touch with close friends and family, which is more interesting to students than their classes.

Finally, it is important to note that there were no differences in the results between high school and university students (76 and 77 points on the test, respectively). Taking into account only university students, who belong to two different regions of the state of Jalisco, there were also no differences, since in both cases the average is 77 points, i.e., the behavior of young people does not vary despite the differences that may exist between the regions and the living conditions of each.

4. Discussion and conclusions

The results of this study confirm the significant presence of nomophobia in high school and university students in the state of Jalisco, with a general concentration at the moderate level of the disorder. This trend was observed in both men and women, although a slight preeminence was found in the sample of women between 17 and 18 years of age, which is consistent with previous studies that highlight the greater vulnerability of this population sector, in addition to the fact that they use devices more to interact.

The fact that an average prevalence of the condition is recorded highlights the need for more in-depth studies to generate effective measures to reverse nomophobia in academic contexts. As discussed in the state-of-the-art section of the introduction, there are policies, rules, and regulations aimed at combating this form of addiction; however, their effectiveness has been limited. A relevant indication is the difference detected by gender: women presen-

ted higher levels of nomophobia than men, which could be related to the social pressure they face to meet expectations of image and behavior, both in face-to-face environments and in spaces of communication, interaction, and coexistence mediated by mobile devices and the internet.

The fact that no substantive differences have been identified between students from different regions or educational levels (high school and university) indicates that nomophobia responds more to generational and cultural factors of technological use than to specific academic or territorial contexts. One explanation may be that ICTs are developed and improved to become increasingly universal; ultimately, to get the most out of devices, all that is needed is buy them, have electricity to charge them, and an internet connection. Meanwhile, the stimuli they generate are rooted in the psychological and social characteristics of all people and not in territorial issues.

The result related to the preference for having trendy devices or devices that are a year old or less reveals the new aspirational goals of young people. Becoming independent, buying a car, or buying a house takes a back seat, perhaps because of the impossibility or difficulty of acquiring them or because they do not represent an immediate achievement worth sharing with family and friends.

Another important finding is the relationship between the brand of the device and the level of nomophobia, with the iPhone scoring highest in the test. This could be due to factors associated with the social status of being seen and validated by others, functionality, the availability of applications, or, as Roig Vila et al. (2023) point out, in cases of loneliness, a way to connect with other people and not be isolated and excluded, which also warrants further research.

In addition, the planned obsolescence of technology, defined as the intentional action of technology manufacturers to ensure that their products and services cease to function after a limited time, is increasingly common and frequent. The Federal Consumer Protection Agency (2019) lists three types of obsolescence that are directly related to cell phones or smartphones: functional obsolescence due to a malfunction or incompatibility with an application; quality obsolescence of a device component; and psychological obsolescence, which appeals to issues of perception and emotional stress to pressure users to have the latest technology.

Furthermore, although overall academic performance did not show a direct correlation with levels of nomophobia, there were isolated cases of severe nomophobia linked to low academic performance, suggesting the need for further study on the effects of excessive cell phone use on academic performance. Some hypotheses to be tested later may be based on the fact that extreme nomophobia influences the performance of students who are more motivated by stimuli in their mobile device applications than in the classroom, which poses a challenge for universities that must generate more meaningful experiences that capture their students' attention.

From an educational and social point of view, this phenomenon becomes a challenge for educational institutions, as smartphones are one of the most important communication and information tools; however, they can become a significant distraction, impairing students' study habits, concentration, and mental health. In this regard, there is an urgent need to develop pedagogical and technological intervention strategies that promote conscious and balanced use of mobile devices, especially in school settings.

One possible reason is that technology advances and becomes internalized at a faster rate than pedagogical innovations, which always seem to be one step behind. However, as with ICT, the solution may lie in stimulating students psychologically, emotionally, and culturally to regain their interest in education or to balance the time spent using devices with that devoted to their studies.

It is suggested that future research delve deeper into the psychological and social dimensions of nomophobia and excessive addiction to technology use, and their relationship to factors such as self-esteem, anxiety, family environment, and digital socialization dynamics, in order to gain a more comprehensive understanding of the phenomenon and possible mitigation strategies.

The family, neighborhood, work, and social environments can have a significant influence on student behavior, so understanding the context of those who suffer from high levels of nomophobia can yield revealing conclusions.

Contribution by authors

PhD. Ma. Teresa Prieto Quezada: conceptualization; research; project management; supervision; visualization, writing – original draft.

PhD. Alfredo Leonardo Romero Sánchez: conceptualization; formal analysis; research; methodology; resources; software; writing – original draft.

PhD. José Claudio Carrillo Navarro: data acquisition, formal analysis; methodology, supervision, visualization, writing-revision, and editing.

Ana Cristina Pinedo Catañeda, M.A.: data curation; formal analysis; research; validation, writing–revision, and editing.

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