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Predictive model of social media and mobile phone's problematic use: Impulsivity and social anxiety

Modelo predictivo de uso problemático de medios sociales y teléfonos móviles: impulsividad y ansiedad social

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SUMMARY

The number of social media and mobile phone users is constantly increasing. Researchers worldwide argue that studying the problematic use of these technologies is of the utmost importance to develop better interventions in the future. The study proposes a predictive model of problematic use of social media and mobile phones in relation to social anxiety the components of impulsivity and emotional regulation. A non-experimental, predictive, and correlational cross-sectional design was used to investigate the interaction between psychological variables. Through a convenience sampling, 242 university students aged 18 to 24 were selected (mean age = 20.29 SE = 2.19) to interact with relevant instruments. Then was applied the predictive model using the structural equations' method and obtained a final predictive model with the following results: $\chi 2 = 7.6$, gl = 7, P <0.001, $\chi 2$ / df = 1.08, NFI = 0.96, CFI = 0.99, RMSEA = 0.019, IC 90 = [0.001 - 0.08], SRMR = 0.038. The findings of direct and indirect effects related to problematic use of mobile phones, social media, and hours invested, link these and the following variables: Negative Urgency, Expressive Suppression of emotions, and Social Anxiety.

Keywords: *Problematic use, impulsivity, social anxiety, emotional regulation, social media, mobile phone.*

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RESUMEN

El uso problemático de las redes sociales y del teléfono móvil ha sido argumentado por investigadores de todo del mundo. Ante el constante crecimiento de usuarios de estas tecnologías se vuelve indispensable profundizar acerca de esta temática para buscar posibles intervenciones a futuro. El objetivo de nuestro estudio fue proponer un modelo predictivo de uso problemático de las redes sociales y teléfono móvil en relación con la ansiedad social, los componentes de la impulsividad y la regulación emocional. Se utilizó un diseño no experimental, predictivo y correlacional de tipo transversal para investigar la interacción entre las variables psicológicas. Por medio de un muestreo de conveniencia, se seleccionaron 242 estudiantes universitarios de 18 a 24 años (M= 20,29 DE= 2,19) quienes contestaron instrumentos de nuestro

interés. Se realizó en modelo predictivo mediante el método de ecuaciones estructurales. Se obtuvo un modelo predictivo final del uso problemático a las redes sociales y al teléfono móvil con los siguientes resultados: $\chi 2 = 7.6$, gl = 7, P < 0,001, $\chi 2$ /df = 1,08, NFI =0,96 , CFI = 0,99 , RMSEA = 0,019, IC 90 = [0,001 – 0,08], SRMR= .038. Se encontraron efectos directos e indirectos significativos entre las variables Urgencia Negativa, Supresión Expresiva de emociones y Ansiedad Social con las horas de uso de las redes sociales, el uso problemático de las redes sociales y del teléfono móvil.

Palabras clave*: Uso problemático, impulsividad, ansiedad social, regulación emocional, redes sociales, teléfono móvil.*

INTRODUCTION

Recently, using the term "behavioral addiction" when researching a particular phenomenon (e.g., Internet addiction: Behavioural addiction to social media) has come into question. Some authors agree on the issues that arise from extending the term "addiction" to conditions that are better described as problematic or maladaptive use. It can undermine both the integrity of the term and the severity of disorders that warrant it without an extension. Additionally, research and treatment can be skewed if they are designed within a framework meant for addiction without considering alternative approaches that may be more suitable and effective. Because of this, researchers have proposed searching for a different term to refer to problematic use within academic literature (1,2).

Some researchers (1) proposed a definition that aims to serve as a basis for the study of addictive behavior and differentiate it from problematic use. This definition emphasizes a) Significant deterioration of functional ability, and/or anguish as a direct result of the behavior; and b) Persistence over time. Additionally, the authors suggest inquiring about the etiology of the behavior in question.

Considering the arguments aforementioned; the suggestions made by several authors; and that there is no concrete evidence demonstrating the presence of addiction, as it is currently used, in "Addictive behavior" to social media and mobile phones; it was reported using the term "problematic use" instead. Specifically, the inability to regulate one's use of social media and mobile phones, resulting in negative consequences in daily life (2,3).

Some authors inquired about the possibility of addictive behavior towards social media. Characteristic examples of this behavior would be being constantly preoccupied with using social media; having an irrepressible urge to log in; or spending large amounts of time and focus on this activity, even at the expense of other recreational activities and areas of life (4-7).

According to Van Deursen et al. (8), the habit of mobile phone use causes involuntary behavior, which is activated by internal or external signals. The automatic impulse to unlock the phone and check for notifications increases the likelihood of developing addictive behaviors. This is reinforced by the social kind of use. Both Internet and mobile phone "addicts" tend to focus greatly on social media apps (8).

Social anxiety is among the psychological variables linked to addictive behavior towards social media. In 1966, Marks and Gelder (9) introduced and defined the term social phobia as including "fear of eating, drinking, shaking, blushing, writing, or vomiting in the presence of other people". According to them, an essential characteristic of the syndrome was the fear of coming off as ridiculous to other people. Since then, several studies about different kinds of interpersonal anxiety have been published.

The term anxiety by social interaction refers to anguish in meeting and talking to other people, regardless of their sex, or whether they are strangers or friends. Specifically, their main concerns revolve around fear of encountering difficulty in conversation: being inarticulate or at a loss for words, coming off as stupid or boring, and being ignored. This research takes an interest in the conceptualization of anxiety due to social interaction (10).

As a theoretical concept, impulsivity is a multifactorial construct that involves the tendency to act unintentionally on "impulse", presenting a lack of awareness about actions and their effects; little to no consideration for consequences; and poorly controlled and disorganized behaviors that

are reflexive instead of deliberate. Behaviorally speaking, impulsivity is thoughtless, reflexive or reactive, and is characterized by an inability for self-control in the face of instant gratification (11).

For the ongoing conversation about the concept of impulsivity, researchers such as Whiteside and Lynam (12) have proposed a model of five impulsivity factors: "Urgency" (positive and negative), for which high scores mean that the subject engages in impulsive behaviors to alleviate or promote affections, regardless of the consequences. "Premeditation" meaning the tendency to think and reflect on the consequences of an act before engaging in it. "Perseverance" referring to the ability to remain focused on difficult or boring activities or situations. And "Sensation seeking" alludes to two different things: (a) a tendency to enjoy or seek exciting activities; and (b) an openness to experiences that may or may not be dangerous; high scores reflect enjoyment in taking risks or engaging in dangerous activities.

Previous studies have observed that deficient impulse control is the main factor in questionable use of social media, the internet, and mobile phones. In other words, people with compulsive symptoms tend to use social media excessively, making impulsivity a risk factor for addictive behavior (13-16).

Another variable related to the problematic use of social networks and mobile phones is emotional regulation. Some researchers (17) argue that lacking access to adaptive strategies to modulate duration and/or intensity of aversive emotional experiences; and dealing with emotions through maladaptive use, such as failing to regulate behavior under stress can lead to a greater engagement to risky behaviors.

In terms of emotions, Eisenberg and Spinrad (2004) define self-regulation in service of achieving social or biological adaptation with regards to affection or the achievement of individual goals (18). They define it as the process of initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of internal feelings, the physiological attention processes related to emotions, motivational states, and/or behavioral concomitants of emotion. Such definition encompasses different cognitive, affective, and biological functions that involve self-control (19).

Hormes, Kearns and Timko (2014) found that participants who presented with patterns of social media maladaptive use had greater difficulty with emotional regulation than participants who did not (20).

In Mexico there is an average of 5 social networks per Internet user; 98 % of them use Facebook, 91 % WhatsApp, and 82 % YouTube. From the total time spent on the Internet, 40 % is dedicated to social media, that is, 3 hours 28 minutes; 30 % more than in 2017. Lastly, out of every 10 Internet users, 7 access social media through their phones (21).

Considering the youth's growing attachment to social media and mobile phones, it is necessary to investigate the problematic use of these technologies. Insight into the relevance of impulsivity in developing problematic use in the Mexican population would help to understand better this phenomenon and give tools to develop future pre-emptive or interventive programs. Additionally, the results will contribute to literature about technologies' problematic use in Mexico.

Consequently, the purpose of this paper is:

- To propose a predictive model of social media and mobile phone's problematic use, in relation to social anxiety, and the components of impulsivity and emotional regulation.

To achieve the general objective the following hypothetical model is proposed:

METHODS

This work aims to propose an illustrative model of addictive behavior towards social media and mobile phones, in relationship to emotional regulation, social anxiety, and impulsivity.

Fort the preceding model an empirical, illustrative, and transversal-correlative design allowed to study the interaction between psychological variables and the development of addictive conducts towards social media and mobile phones.

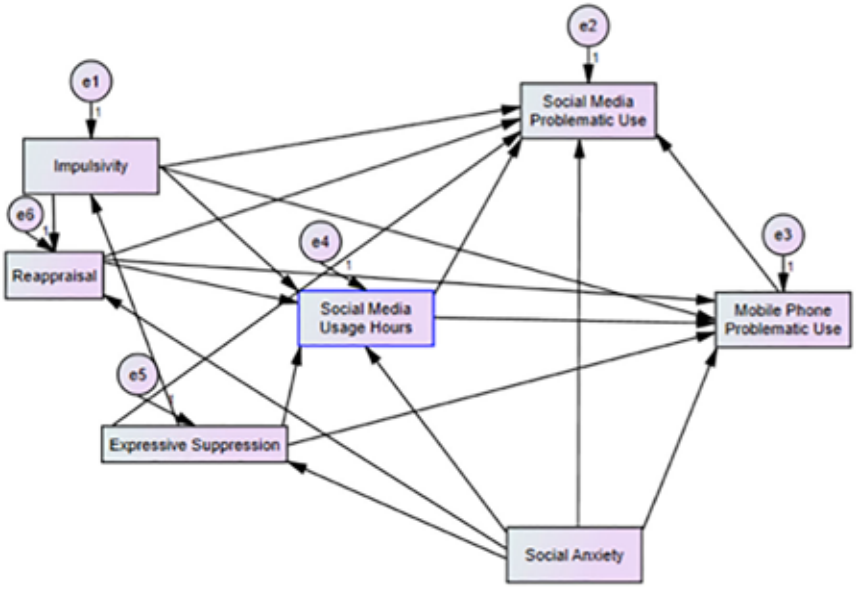

Figure 1. Hypothetical model of social media and mobile phone problematic use.

Participants

The study subjects were selected through convenience sampling. 242 BA university students (163 women and 79 men) between 18 and 24 years old (mean age = 20.29 SE = 2.19), from two private universities and different majors, one located in the municipality of Guadalupe and the other in San Nicolás de Los Garza.

Instruments

Socio-demographic Questionnaire

This questionnaire collects personal data from the test subjects such as sex, age, major, etc. Additionally, it inquires about usage habits with regards to social media through questions such as "Approximately, how many hours do you spend daily on social media?".

Social Media Addiction Questionnaire

The Social Media Addiction Questionnaire (22), from the DSM-IV-TR, is a diagnostic instrument that does not recognize psychological addictions as disorders; nevertheless, most authors treating this kind of addiction take substance addiction indicators as a reference. The questionnaire has 24 items after Likert's fashion of five answer options ranging from A (Always) to N (Never). It has three categories: the first one is "Obsession"; the second is "Lack of Restraint"; and the third is "Excessive Usage". This instrument has an alpha of .93.

The scale of Mobile Phone Problem Use

The Mobile Phone Problem Use Scale (MPPUS-10) is an instrument originally developed by Bianchi and Philips (2015) that was adapted as a short version by Foerster et al (24) and translated to Castilian by López-Fernández, Honrubia-Serrano and Freixa-Blanxart (23-25). This is a Likert scale and has 10 items with 10 range points, going from "Not entirely true" to "Extremely true". The items relate to tolerance, abstinence syndrome, negative sequels in life, and pair dependency. Because the population

of the study is Mexican, and the instrument was translated to Castilian which fits a Spanish population better, the instrument's redaction was modified to account for dialectical understanding (for example, "cellphone" was used instead of "mobile phone"). The scale's reported alpha is 0.86.

The scale of anxiety in social interaction

The Social Interaction Anxiety Scale (SIAS-20) from Mattick and Clarke (1998) has 20 items fashioned after Likert with a five-point range (from 0 to 4). It has 17 items redacted positively to account for social anxiety, the 3 remaining items (5, 9, and 11) are inversely redacted. High scores on the SIAS-20 reflect elevated social anxiety. A one-dimensional structure and a high internal consistency have been reported in Mexican university students (α=0.88) (10,26).

UPPS-P Impulsivity Scale (short version)

The following is a list of the five impulsivity traits measured in the short version of the UPPS-P impulsivity scale, followed by an example of a reactive related to the trait, and its analogous item in Spanish. The scale has 20 items and measures five impulsivity traits (four items each). Negative Urgency, Thoughtlessness, Lack of perseverance, Sensation Seeking, and Positive Urgency. For the Spanish version of the scale, were selected 20 items from the original (59 items), these correspond to the 20 items Billieux et al. (27) selected for the short version of the UPPS-P in France. The reported alpha of the dimensions goes from 0.61 to 0.81 (28).

Emotional Auto-Regulation Questionnaire (ERQ)

The Emotional Regulation Questionnaire (29) has 10 items; Six of them evaluate "Cognitive reevaluation" (CR). The remaining 4 items evaluate "Emotional Suppression" (SE). This instrument evaluates the proposed strategies to modify or suppress the emotional experience of the participants. Rodríguez-Carvajal, Moreno-Jiménez and Garrosa (30) adapted the Spanish version, the answers are fashioned after Likert and range from 1 "Totally agree" to 7 "Totally disagree". The psychometric properties in the adapted version of Peru found intern consistencies of α=.72 for CR and α=0.77 SE.

It is important to mention that the psychometric properties of the instruments used for this study were analyzed. Additionally, these instruments have been used in previous studies on the Mexican population (26,31-34); different authors refer to the validity in Spanish-speaking countries, including but not limited to Latin America (35-37).

Procedure

First, the university where was applied the research instruments was visited to get approval from the chair of the Art and Humanities department so we could apply the instrument to the students. The objective of the project and the relevance for the student population were explained in detail. Afterward was an official letter directed to the university's administration, from the faculty director, formally requesting permission to carry out the investigation. To gather participants, the university announced it to the students, explained the relevance, and talked to them about informed and confidential consent for the research. Instruments were uploaded to the Lime Survey platform, which is a website for the creation of databases and administration of online questionnaires. On the agreed date, the students gathered in a classroom, and a link was provided so they could access the instruments. Even though the students answered online, through their phones or computers, researchers were present during the process to ensure that they could answer any questions.

Statistic analysis

To verify the adjustment in the theoretical model, and following the principles of Byrne (38), an analysis of maximum likelihood was done using the program AMOS 23. The goodness of fit was evaluated using a Relative Pearson Chi-square (chi-square/degrees of freedom), a comparative fit index (CFI), the Root Mean

Square Error of Approximation (RMSEA), and the Standardized Root Mean Squared (SRMR). The relationship between $\chi 2$ / df in the range from 3 to 1 indicates an acceptable adjustment. The resulting NFI and CFI values of 0.95 or higher indicate a good adjustment. An RMSEA value below 0.08 indicates an adequate adjustment, and an SRMR below 0.06 a good adjustment to the model. A Bias-Corrected Percentile Bootstrap Sampling Method calculated the error of every parameter with a level of significance of 95 % in a sample simulation of 2000.

RESULTS

The proposed hypothetical model (Figure 1) found the following: $\chi 2$= 122.999, df = 2, P < 0.001, $\chi 2$ /df = 61.5, NFI = 0.71, CFI = 0.70, RMSEA = 0.501, IC 90 = [0.42 - 0.57], SRMR= 0.115.

Table 1

Coefficients of linear regression in the hypothetical model of addictive behavior to social media and mobile phone

			β Estimado	P	β Estand.
Suppression	⇠	Social Anxiety	0.099	0.001	0.204
Impulsivity	⇠	Suppression	0.022	0.804	0.016
Reappraisal	⇠	Impulsivity	-0.314	***	-0.244
Reappraisal	⇠	Social Anxiety	0.068	0.205	0.079
Hours Usage	⇠	Impulsivity	0.065	0.078	0.116
Hours Usage	⇠	Social Anxiety	0.028	0.248	0.076
Hours Usage	⇠	Suppression	-0.035	0.486	-0.045
Hours Usage	⇠	Reappraisal	0.001	0.969	0.003
Mobile Phone PU	⇠	Impulsivity	-0.085	0.522	-0.038
Mobile Phone PU	⇠	HoursUsage	1.317	***	0.332
Mobile Phone PU	⇠	Social Anxiety	0.365	***	0.247
Mobile Phone PU	⇠	Suppression	0.214	0.233	0.070
Mobile Phone PU	⇠	Reappraisal	-0.156	0.128	-0.091
Social Media PU	⇠	Impulsivity	0.089	0.256	0.047
Social Media PU	⇠	HorasUso	0.296	0.041	0.088
Social Media PU	⇠	Social Anxiety	-0.011	0.839	-0.009
Social Media PU	⇠	Mobile Phone PU	0.638	***	0.752
Social Media PU	⇠	Suppression	-0.366	***	-0.142
Social Media PU	⇠	Reappraisal	0.133	0.028	0.092

Level of significance *** <.001

After analyzing the results of the hypothetical model, it was restructured to find the most adequate statistical arrangement. Firstly, the impulsivity dimensions that were not significant in the model were suppressed. Out of five dimensions, only Negative Urgency was adequate in terms of adjustment index and significance. After that, the emotional regulation strategy "Cognitive Restructuration" was eliminated; and only the related model of Emotional Suppression

was included. Finally, an exhaustive theoretical revising was done to reconfigure the relationships among variables, concluding in the analysis of covariance between Negative Urgency and Social Anxiety. Once this process was over the result was a final predictive model of problematic use of social media and mobile phone (Figure 2), obtaining the following results: $\chi 2 = 7.6$, df = 7, $P < 0.001$, $\chi 2 /df = 1.08$, NFI = 0.96, CFI = 0.99, RMSEA = 0.019, IC 90 = [0.001 - 0.08], SRMR= 0.038.

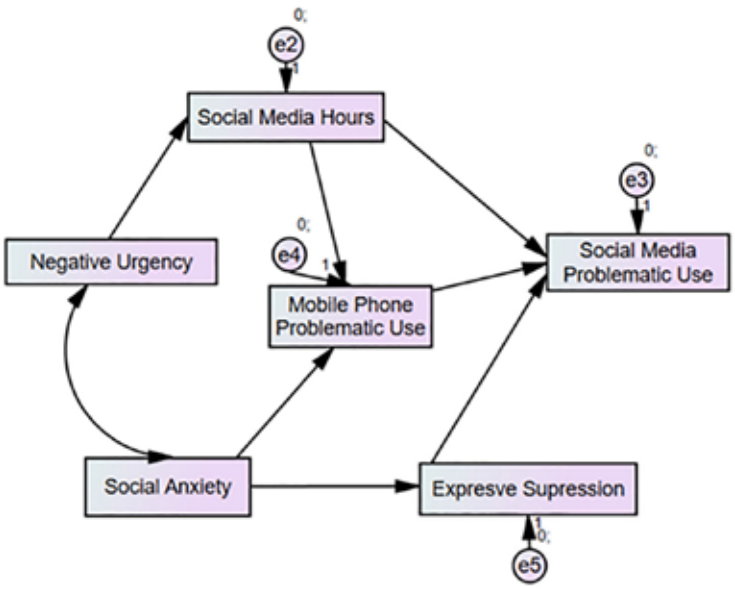

Figure 2. Final model of social media and mobile phone problematic use.

Table 2

Linear regression coefficients of the final model for addictive behavior towards social media and mobile phones

			β Estimado	P	β Estand.
HoursUsage	←	N. Urgency	0.272	0.005	0.177
Mobile Phone PU	←	Hours Usage	1.306	***	0.331
Mobile Phone PU	←	Social Media PU	0.374	***	0.255
Suppression	←	Social Media PU	0.099	0.001	0.204
Social Media PU	←	Mobile Phone PU	0.630	***	0.741
Social Media PU	←	Hours Usage	0.314	0.030	0.094
Social Media PU	←	Suppression	-0.223	0.032	-0.087

Level of significance *** P = < 0.001

Direct and indirect standardized effects were analyzed to determine the degree of significance between the variables. The direct effects were the following: Negative Urgency from hours of social media use (0.18, P <0.05). Social Anxiety with Expressive Suppression (0.20, P < 0.05). Social anxiety with problematic use of cellphone (0.25, P < 0.001). Hours of social media use with problematic use of cellphone (0.33, P < 0.001). Hours of social media use with problematic use of it (0.09, P > 0.05). Expressive Suppression with problematic use of social media (-0.09, P < 0.05). And problematic use of the mobile phone with the problematic use of social media (0.74, P <0.001).

Table 3

Standardized Direct Effects – Two-Tailed Significance (BC)

	N. Urgency	Social Anxiety	Hours Usage	Suppression	Mobile Phone PU
HoursUsage	0.006	----	----	----	----
Suppression	----	0.003	----	----	----
MobilePhone PU	----	0.001	0.001	----	----
Social Media PU	----	----	0.089	0.028	0.001

The indirect effects were: Negative Urgency with problematic use of the mobile phone (0.05, P < 0.005) and problematic use of social media (0.06, P<0.005), both mediated by the hours of use of social media. Social anxiety with problematic use of social media (0.17, P < 0.001) mediated by Expressive Suppression and problematic use of the mobile phone. Lastly, hours of social media use with problematic use of it (0.24, P < 0.001), mediated by the problematic use of the mobile phone. The final model explains 60 % of the problematic use of social media, with the problematic use of mobile phones having the most relevance.

Table 4

Standardized Indirect Effects – Two-Tailed Significance (BC)

	N. Urgency	Social Anxiety	Hours Usage	Suppression	Mobile Pone PU
HoursUsage	----	----	----	----	----
Suppression	----	----	----	----	----
MobilePhone PU	0.004	----	----	----	----
Social Media PU	0.003	0.001	0.001	----	----

DISCUSSION

The aim was to construct a predictive model of problematic use of social media and mobile phones concerning emotional regulation, impulsivity, and social anxiety. The results of the hypothetical model proposed were unfavorable due to the statistical parameters' lack of adjustment; therefore, the initial model was re-formulated by eliminating the irrelevant relations. The model's lack of adjustment may be associated with the irrelevant impulsivity components since only Negative Urgency had a considerable relationship with problematic use of mobile phones and social media. These results

are consistent with other studies (39,40); in which this dimension is related to the problematic use of social media and mobile phones. Besides, in Emotional Regulation, Expressive Suppression alone was the dimension that best adapted to the model. This is similar to the results of previous studies of internet addiction (41).

Given the results, the relationships between variables were reformulated through path analysis resulting in the adjusted model. Next, a recap of the changes to the original model: Firstly, the relevance of hours of social media use in the sample was confirmed, since they are significantly correlated to problematic use of mobile phone and social media, negative urgency, and social anxiety. These relationships were considered significant to the final predictive model. Previous studies documented these same results, finding that daily invested hours were an important factor in anticipating problematic use of the mobile phone (42,43).

Every year, the constant growth of social media users in social media and mobile phones comes with an increase in hours of use (21). Consequently, it is necessary to inquire about the relevance of it with regard to problematic use. It was found that the hours of social media users have a significant indirect relationship to problematic use of social media mediated by the problematic use of the mobile phone. These results are consistent with previous studies (42,43) which concluded that the hours of use are a relevant predictive factor of addictive behavior to social media. These conclusions make sense because in our country mobile phones are the entryway par excellence to the internet, and the web in turn is used mainly to access social media (21). Taking into account LaRose's elaborations (44) some of which are frequently por-trayed on television. Perceived ease of retrieving the examples and the source of theexamples were measured. Media examples were more frequently recalled for eventsportrayed often in the media but infrequently experienced personally (e.g., court-room trial, murder, whether the use of social media through mobile phones is a conscious and regulated activity or not, the hours of use are a useful measure regarding impulsive behavior and/or social anxiety related to the problematic use of social media and mobile phone

The next step was considering the Negative Urgency dimension of the UPPS-P scale, there are two reasons for this: (a) Statistically speaking, it showed the most internal consistency and reliability in the results, demonstrating a better adaptation to the model. (b) Theoretically speaking, this dimension of impulsivity is the most related to the problematic use of mobile phones and social media (39,40,45).

Negative Urgency is defined as the tendency to react with unrestrained actions or conducts in the face of negative feelings, which can result in regret; in other words, experiencing emotional distress generates a spike of impulsive behavior (12,46). The model then hints at an increase of hours devoted to social media use during times of personal struggle, and mirrors the theory proposed by LaRose et. al (44) where a subject with inefficient auto-regulation starts using different kinds of outlets (such as social media) to cope with boredom, reduce loneliness, or to "pass time". The social cognitive theory defines these motivations as self-reactive incentives, and following the procedures of classical conditioning, these incentives motivate the consumption of media as a conditioned response to dysphoric states (44).

Speaking about Negative Urgency, it is relevant that it is directly related to the hours of social media use and not with the problematic use of these (15)social media usage, and loneliness and to test the structural hypothetical model developed based on the literature. The study was conducted on 307 (164 female, 143 male. Negative Urgency was indirectly significant with the problematic use of social media mediated by the number of hours of use. When dysphoric affects appear (stress, irritability, anger, etc.) the number of hours used in social media increases due to impulsive behavior and the relief that a person experiences in social media can generate excessive use, turning into problematic use. This is similar to the evidence presented by LaRose et al. (44) some of which are frequently por-trayed on television. Perceived ease of retrieving the examples and the source of theexamples were measured. Media examples were more frequently recalled for eventsportrayed often in the media but infrequently experienced personally (e.g., court-room trial, murder. Negative Urgency had the same indirect effect with problematic mobile

phone use. Given these results, the interpretation would be the same and it would only be added that this device, in addition to social media, offers a variety of applications such as music, online games, video, etc., with greater use and access to other apps (47).

Regarding the dimension of Social Anxiety, the following was found a) this factor relates to the suppression of emotions, in this case, it is explained that people with high rates of Social Anxiety possibly face greater difficulty communicating emotions, and b) social anxiety is related to problematic mobile phone use. These findings fit with other studies (48,49)the precise nature of the emotion dysregulation in SAD has not been well characterized. In the present study, the Emotion Regulation Interview (ERI, where people with high rates of Social Anxiety show a great use of Expressive Suppression of emotions.

Additionally, these results align with Nakamura's findings (50). He states that in undesirable social situations, it is very common to look at a mobile phone to avoid them; he argued that many users intentionally look at their phones to avoid other people (acquaintances or strangers) and report a kind of social message in public spaces. This explanation theoretically matches the social skills model proposed by Turel and Serenko (51), they proposed that users who lack self-presentation skills are more likely to participate in virtual communication rather than face-to-face interactions. This pattern of behavior is constantly reinforced through rewards, promotes compulsive use, and negatively affects the subject. Mobile phones have functions beyond being an access point to social media (47), but, given the difficulty of expressing emotions in a person, or having limited face-to-face interactions, it is very likely that gradually, the acceptance found within social media, the satisfaction of using it, and the positive experiences associated to it can lead to a problematic use (52,53).

Another relevant aspect of Social Anxiety is that it had a significant indirect effect on the problematic use of social media mediated by Expressive Suppression of emotions. Even though the factor load is small and negative, it is inferred that users with high rates of Social Anxiety express a little more through social media than they do physically when they are with people. This is consistent with the model of social skills exposed by (51).

The covariance between Negative Urgency and Social Anxiety was significant. The results lead to believe that people with high Social Anxiety indexes experience dysphoric states constantly, possibly due to the cognitive weight of Expressive Suppression (29), in-person social interaction, or worry about future encounters. This would mean that people with social anxiety spend more hours on social media to deal with the dysphoric state (54,55).

In emotional regulation strategies, because there was not a significant relation in the sample, was decided to eliminate Cognitive restructuration from the model. Theoretically, it is defined as a form of cognitive change, in which people change the emotional impact of emotion when they find it too strong. For example, as Gross and John (29) explained, a person can take an admission interview as an opportunity to find if he/she likes or enjoys the school instead of treating it like a stressful test. Unlike other studies (56,57), cognitive restructuration results were not as significant in the problematic use of mobile phones and social media, possibly because of the differences between cultures in emotional regulation. In other words, our sample leans more towards using the mobile phone as a distraction. Conversely, expressive suppression of emotions was pretty significantly related to problematic use of social media (56,57), which maybe indicates that people who tend to suppress their emotions express themselves differently through social media, uploading photos, updating their status, sharing music or "memes", etc.

In summary, the final model indicates that people who present with dysphoric states due to high levels of social anxiety or something else can also present impulsive behaviors that increase social media and mobile phone use, leading to problematic use (54,55). Furthermore, people with a high level of social anxiety tend to use their phones to bypass social situations (50). They also tend to suppress emotions, and to lessen the effects of dysphoric states, or to find an emotional outlet, they turn to social media (41,57). When this happens continuously, it can become conditioned behavior until it turns to problematic use (44).

CONCLUSIONS

This study provided empirical evidence about negative urgency, social anxiety, and emotional suppression concerning problematic use of social media and mobile phones. Currently, the use of these technologies is very common and socially accepted. Among young people, mobile phones are almost vital, and among Mexicans, they are the most used device (21). Because of this and the introduction of apps, people use mobile phones and devices for practically everything; from communication and social media such as WhatsApp, Facebook, Twitter, etc. to listening to music, watching movies, playing video games, doing exercise, buying, etc. All this makes it difficult to determine whether mobile phone addiction infers from hours of use. The answer to addictive behavior may lie in etiology, factors, and individual differences that motivate excessive use (1).

It is recommended further research on other factors and variables that may be implicated in this problem, such as emotional regulation strategies, or generalized anxiety disorder. The replication of the model is requested in other sectors of the Mexican population, and other cultures as well, to confirm the data presented.

Limitations

The main limitation is that because the sample includes only university students, concluding the general population without a fair degree of judgment is not advisable. On the other hand, students answered the questions online even though they were in a classroom, so it is unknown if social desirability affected the procedure. Since this is a cross-sectional study, in moving forward we suggest that a longitudinal approach can be helpful to inquire about causal factors.

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