

## Use of Facebook, perceived stress and alcohol consumption among university students

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**Abstract** *Analysis of the effect between the use of Facebook, perceived stress and alcohol consumption among young people. A descriptive, correlative and cross-sectional study was carried out. The sample of 1110 young university students from Nuevo León, Mexico, was selected by probability sample. Personal Data and Prevalence of Alcohol Consumption Inventory, Alcohol Use Disorders Identification Test (AUDIT), Facebook Use Identification Test, Perceived Stress Scale were used. The Research Ethics Committee approved it. We observed 6.4% of young people have mentioned that the use of Facebook affected the alcohol consumption. Seeing adds with alcohol on Facebook was related to alcohol consumption ( $r_s = 0,204$ ,  $p < 0,05$ ). At the time Facebook was used, it was related to the perceived stress ( $r_s = 0,189$ ,  $p < 0,05$ ). Finally, it was observed that there is a significant impact between the hours and days of use of Facebook, the stress perceived by young people, the age and gender regarding the harmful alcohol consumption among university students ( $R^2 = 30,9\%$ ,  $p = 0,003$ ). Therefore, it is crucial and necessary to consider social networks an important variable to be included in future interventions regarding mental health.*

**Key words** *Social network, Stress, Consume alcohol, Young*

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## Introduction

University students have been considered one of the most vulnerable population to develop addiction to alcohol consumption. When consuming this type of licit drugs, we can observe an eight-time increase on the chances of beginning to use other drugs<sup>1</sup>. In the world, approximately four in each five young people consume alcohol and more than 40% reported having drunkenness experience<sup>2</sup>.

In Mexico, the alcohol consumption among young people changed from 40 to 70% and the alcohol consumption pattern includes drinking large amounts of alcohol in parties and reunions being close to drunkenness, frequently during the weekends. The consumption pattern among Mexican young people comprises two factors to quickly reach addiction: the regularity of use and the abuse regarding the amount of alcohol consumed<sup>3</sup>.

In this regard, one of the types of alcohol consumption that has increased recently among the young Mexican population is the harmful or hazardous consumption, which produces several consequences to mental and physical health, and the social image of young people. It is considered harmful or hazardous when someone consumes, in a typical day, 10 or more standard drinks by men or 6 or more standard drinks for women<sup>3,4</sup>.

We emphasize that the alcohol consumption is marked by being a multi-cause phenomenon; among the identified causes are genetic heritage, individual characteristics, social, economic and environmental factors<sup>5</sup>. The perceived stress is among these factors and can increase the risk of consuming alcohol and other drugs<sup>6</sup>, specially on young people, the stress is common due to a lot of changes experienced during this stage of life, besides several daily situations related to school, interpersonal relationships or work<sup>6-8</sup>.

As already mentioned, young people pass through a stage considered to be difficult during human development, together with changes in the dynamics of society which can have an important impact on this population. An example of these changes is the way people socialize with their peers, today, young people communicate with friends and family on websites which are becoming more and more popular and impersonal, like Facebook. The socialization website has been placed as one of the most popular social networks among young people, standing out by having around 1,320 million active users of Facebook in the entire world<sup>9</sup> and, in Mexico, it

is estimated that 88.2% of young people use this network on a daily basis<sup>10</sup>.

It is important to mention that it is not clear yet how the use of Facebook can benefit or affect a person's life, since for some people this platform can increase your satisfaction regarding life and the social support perceived, for others, it can be a triggering factor of stress, anxiety, depression, and the beginning of substances consumption or an increase on the pattern of alcohol consumption, among others<sup>6-8</sup>.

The American Psychological Association<sup>11</sup> indicates that 39% of people between 18 and 33 years old have declared themselves as people who suffer from stress and that young people who suffer from stress are more likely of having irritability conditions. It is clear that this population seeks coping strategies to reduce tension caused by stress presenting behaviors considered risky and that the perceived stress was emphasized as an alcohol consume predictor<sup>6-8</sup>.

Facing this fact, we can observe how the use of new virtual spaces have had impact on the current social dynamics; through these spaces it is easier to be present in an interaction platform and social organization, and thanks to the fast way of life that society is living today, the being in person is impossible<sup>12,13</sup>. The young people immerse in these new ways of interactions and organization can experience situations that become stressful like receiving invitations to events, having a post of photo not accepted by its friends through demonstrations as "Like" or even having a lot of friends on this social network and feeling responsible for being aware of the activities shown on Facebook<sup>13-15</sup>.

In this regard, one consequence that youth can present is the alcohol consumption based on the observation of social networks that their friends and families have this risky behavior, they could start doing it or increase the alcohol consumption. We can add to this context the impact that stress has on young people, which can be expressed in different situations (school, interpersonal at work) and in the use of Facebook.

Therefore, we can recognize the fact of keeping studying these variables collectively between young people because they are a risk population, aiming at broad the knowledge on alcohol consumption in Mexico, learning more on the influence of the use of Facebook on people's lives and the stress presented by young people, and finding ways to help the preventive nursing care towards alcohol consumption. Thus, the objective of the present study is to analyze the impact between

the use of Facebook, the perceived stress and the alcohol consumption among young people.

## Methodology

A descriptive, correlative and cross-sectional study. The population was formed by young university students from different education institutions in Nuevo León, Mexico. There was a probability sampling stratified by education institutions with proportional allocation to the size of strata. The sample presents 110 young university students between 18 and 24 years old, of which 60 women and most of them only dedicated to study. The calculations were done in the statistical package nQuery Advisor® 7.0<sup>16</sup>, with significance level of 0.05, a power of 90% and a non-response ratio of 5%.

*Alcohol consumption.* It was measured by Prevalence of Alcohol Consumption and by the Alcohol Use Disorders Identification Test (AUDIT), validated by the Mexican population and with 10 items which evaluates the alcohol consumption in the last twelve months and its consequences. The statements from 1 to 3 determined the amount and the frequency of alcohol consumption, from 4 to 6 the possibility of alcohol dependence and 7,8, 9 and 10 evaluates the harmful consumption. Each question has a Likert scale with score from 0 to 4.

It was considered that the cut points proposed by the World Health Organization<sup>17</sup>, which indicate that the 0 score correspond to not having pattern of alcohol consumption, 1 to 7 score correspond to a risky pattern of consumption, 8 to 19 score reveals a harmful pattern of consumption, the same way 20 to 40 score is considered as a harmful pattern of consumption and possible dependence. This instrument revealed to be reliable, presenting Cronbach's Alpha ranging from 0.64 to 0.92<sup>4,18</sup>.

*Use of Facebook* It was measured through 5 questions which identify the frequency and the general data of use of Facebook, that is, the exposition to content regarding alcohol on Facebook. The questions used were the following: On average, how many days per week do you use Facebook?, On average, how many hours do you spend on Facebook? How many times, in the last 30 days, did you see photos involving alcoholic beverage on Facebook? How many times, in the last 30 days, were you invited on Facebook to a

party that involves alcohol consumption? How many friends do you have in total on Facebook? Normally, do you access Facebook on which device? Do you think the use of Facebook affected your alcohol consumption? Do you think the use of Facebook affected the alcohol consumption of your friends?

Each question corresponds to a continuous variable. For questions on exposition to content regarding alcohol consumption on Facebook an index was done in which it was established the higher the score, the higher the exposition. It is important to mention that the questions were selected by specialists in dependence prevention to learn about the use of Facebook presented by young people.

*Perceived Stress.* It was measured through the Perceived Stress Scale, developed by Cohen et al.<sup>19</sup>, validated and culturally adapted by González e Landero<sup>20</sup> to the Mexican population. It was formed by 14 items with answers in Likert scale, ranging from never (0) or very frequent (4). The bigger the population, the higher the stress perceived by the person. It is crucial to highlight that this scale has been broadly used in many countries, showing reliability and validity, acceptable Cronbach's alphas of 0.79.

For the data collection procedure, it was approved by the Research Committee and the Research Ethics Committee of the Nursing School of the Autonomous University of Nuevo León, being requested a written authorization to perform the study in each one of the education institutions. It was requested the informed permission of young people as well as the participation was voluntary, being provided information anonymously and confidentially.

The data processing was performed on the Statistical Package for Social Science (SPSS) for Windows V22.0. Descriptive statistics were used to obtain frequencies, proportions, measurements of central tendency and variability, and non-parametric inferential statistics to meet the objectives. The Mann Whitney U-Test was performed to learn the differences on the consumption among young people who perceived that Facebook have affected their consumption and those who do not perceive this, and after, a Spearman's correlation test and a Model of Multiple Linear Regression. The internal consistency of instruments was determined by the Cronbach's alpha reliability coefficient, showing acceptable results.

## Results

110 university students attended the study, 58.2% of the population were women with average age of 20.3 years ( $SD = 2.08$ ). The sample was mainly formed by young people who were on the first semester of course (30.9%), of which only 17.3% said to be studying and working, and 80% affirmed that were still living with their parents.

On the alcoholic beverage consumption, 88.2% of young people consumed alcohol in the last year and 65.5% consumed in the last month. Regarding the types of alcohol consumption, 52.7% revealed a risky consumption, 24.5% a harmful consumption and 4.5% indicated alcohol dependence.

Regarding the use of Facebook (Table 1), it was observed that the most used device to access Facebook was the cellphone (82.7%), furthermore, 6.4% of young people mentioned that the use of Facebook has affected their alcohol consumption and 72.7% considered that the use of Facebook has affected their friends' alcohol consumption. The average stress perceived by young people was 25.09% ( $SD = 7.03$ ).

In reference to the use of Facebook having affected the alcohol consumption of young people (Table 2) significant differences were identified regarding the reported alcohol consumption in relation to the fact of the you person perceiving that the use of Facebook have affected his or her alcohol consumption ( $U = 192.500, p = 0.038$ ), we can observe that university students who consider that Facebook have affected theirs alcohol consumption have higher alcohol consumption scores than youngpeople who do not.

The results show that display of adds with alcohol content on Facebook ( $r^2 = 0.204, p < 0.05$ ) is positively linked to the alcohol consumption of young university students, which indicates

that when you see the alcoholic beverages on Facebook, you have higher chances to consume alcohol. Regarding the perceived stress, it was observed that the hours of use of Facebook ( $r^2 = 0.189, p < 0.05$ ) are positively linked to the perceived stress of university students, which indicates that higher the number of hours of use of Facebook, higher the perceived stress. Still on the effect of the use of Facebook and perceived stress on harmful alcohol consumption by university students, it was observed that there is a significant effect, indicating that the hours and days of use of Facebook, perceived stress, age and gender ( $r^2 = 30.9\%, p = 0.003$ ) influence alcohol consumption among university students (Table 3).

## Discussion and conclusion

This study allowed to analyze the effect between the use of Facebook, perceived stress and alcohol consumption among university students. As for the use of Facebook, university students use the social network about 7 days per week and about 4 hours per day, which differs from other studies conducted, mainly in the United States, pointing to daily use between 30 and 90 minutes per day<sup>21-24</sup>. These results can be explained by the constant increase in the use of new technologies among young people in order to maintain ties with their different social circles.

It was also observed that university students who mentioned that the use of Facebook has affected their alcohol consumption were the ones that presented higher average consumption, unlike the young people who did not mention it. These results converge with other studies that showed that university students consider that the use of Facebook increased alcohol consumption<sup>6,25,26</sup>. These results can be explained by the

**Table 1.** Use of Facebook among university students. Nuevo León, Mexico.

|   | N   | $\bar{X}$ | Mdn   | SD     | Value   |         |
|---|-----|-----------|-------|--------|---------|---------|
|   |     |           |       |        | Minimum | Maximum |
| Days of use of Facebook per week                                | 110 | 6.65      | 7.0   | 0.84   | 2       | 7       |
| Hours of use of Facebook per day                                |     | 3.96      | 3.0   | 3.36   | 1       | 20      |
| Committees on Facebook of parties involving alcoholic beverages |     | 4.04      | 2.5   | 5.09   | 0       | 30      |
| Photos on Facebook involving alcohol                            |     | 16.62     | 10.0  | 29.08  | 0       | 300     |
| Friends on Facebook   |     | 760.81    | 600.0 | 638.11 | 90      | 4900    |

Observation: ( $\bar{X}$ ) = average, Mdn = median, SD = standard deviation.

**Table 2.** Alcohol consumption measured by AUDIT according to the use of Facebook.

| Alcohol consumption (AUDIT)   |                |           |     |      |         |       |
|---|----------------|-----------|-----|------|---------|-------|
| Considers that the use of Facebook affects his or her alcohol consumption | n <sub>2</sub> | $\bar{X}$ | Mdn | DE   | U       | p     |
| Yes   | 7              | 8.43      | 8   | 5.71 | 192.500 | 0.038 |
| No  | 103            | 4.99      | 3   | 6.09 |         |       |

Observation: n<sub>2</sub> = participants who drink alcohol,  $\bar{X}$  = average, Mdn = median, SD = standard deviation, U = of Mann Whitney, p = statistical significance.

**Table 3.** Influence of the use of Facebook and the perceived stress on the harmful alcohol consumption among university students.

|                               | SC           | Df    | CM      | F      | p     |
|-------------------------------|--------------|-------|---------|--------|-------|
| Regresión Residual            | 6.017        | 15    | 0.401   | 2.618  | 0.003 |
| R <sup>2</sup> = 30.9%        | 13.483       | 88    | 0.153   |        |       |
| Pattern (n <sub>2</sub> =103) | Coefficients |       |         | Sig    |       |
|                               | B            | EE    | $\beta$ | T      | p     |
| (Constant)                    | 1.814        | 0.792 | ---     | 2.289  | 0.024 |
| Hours of use of Facebook      | -0.030       | 0.013 | -0.240  | -2.288 | 0.025 |
| Days of use of Facebook       | 0.040        | 0.020 | 0.410   | 2.005  | 0.048 |
| Perceived stress              | 0.029        | 0.014 | 0.217   | 2.157  | 0.034 |
| Age                           | -0.049       | 0.021 | -0.236  | -2.328 | 0.022 |
| Gender                        | 0.326        | 0.084 | 0.372   | 3.868  | 0.001 |

Observation: AUDIT = Test to identify disorders related to alcohol consumption, CUF = Facebook use questionnaire, PSS = Perceived Stress Scale.

influence exerted by the peers, creating some social pressure to carry out risk behaviors (alcohol consumption).

Another important finding was the relationship between the display of ads with alcohol content and the consumption of alcohol among young people. One explanation for this is that regular ads that are shared by the top liquor companies on Facebook show a “positive” context of alcohol consumption (parties, reunions, clubs), which denotes happy times, especially among young people. The use of Facebook as a means of communication can create a greater persuasion in the young than other means of communication, due to the possibility of sharing with friends and the repeated visualization, which can increase persuasion<sup>6,27</sup>.

It is important to note that the majority of young people belonged to the female sex and the relationship of women with the Facebook tool contains gender specificities. The use of virtual social media is particularly popular among young women<sup>28</sup>; they use technology more for individual purposes<sup>29</sup>.

Scientific evidences suggest that participants who spent more time on Facebook reported be-

ing in a more negative state of mind than those who spent less time on the site<sup>30</sup>. By the methodological conception and the purpose of the present investigation, the results confirm that the gender issue deserves a deeper approach in the quest to understand the social constructions permeated by social networks that affect men and women differently.

Regarding the perceived stress, it was verified that the greater number of hours of Facebook use, the greater the perceived stress of the young. This result is consistent with a study conducted in the United States, where it is reported that young people using Facebook may experience stress from the number of friends or people added. An explanation for this is that the more contacts on this network, the more time it takes to check for updates, the more likely to be concerned about any comments or having to respond to all comments or direct messages, added to the daily life<sup>15</sup>.

These results invite us to analyze in a more complex way the role of technology and its use. It is known that well-being is negatively associated with being alone and positively spent in conversations with others<sup>31</sup> which would theoretically place Facebook as a favorable tool. However, the

type of conversation is a differential, in which the high level of well-being is associated with more substantial conversations and few short conversations<sup>32</sup>. When considering the type of conversation that occurs in social networks, we can consider it as superficial, which is negatively associated with the feeling of satisfaction with life and well-being, and would explain the association result, in this study, with perceived stress.

It is concluded that there is an effect between the hours and days of use of Facebook, the perceived stress of young people, age and gender in alcohol consumption (harmful) in univer-

sity students. What is important is that there is not enough information in Mexico on how new technologies are affecting the mental health of young people. It is important to emphasize that the results presented are unprecedented in the world and need to be explored in other contexts in order to have parameters of comparison to the relations, now identified, in other socio-cultural realities. In addition, this study provides relevant information for the design and implementation of future multi professional interventions that focus on strategies that counteract the negative effects of new technologies on mental health.

### **Collaborations**

EIP Navarro Oliva – design, research, methodology, data processing and final editing. ECS Gherardi-Donato – research, methodology and discussion. FR Guzmán Facundo – design, research, final editing. J Álvarez Bermudez – research and statistical data processing.

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