# Uses of WhatsApp in the Spanish university student. Pros and cons

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**Abstract**
**Introduction:** The objective of this research was to analyse how the use of instant messaging services impacts the Spanish university context and what positive and negative consequences it generates on students' behaviour. In order to do this, we worked on the most popular application in the territory in question, WhatsApp, and its use by university students. **Methodology:** The research developed has used the quantitative technique (survey to a sample n = 332) to determine the use that is given to conventional text messages, as well as other options for instant messaging (such as voice or images). Likewise, some impacts on the academic environment were analysed, such as the possible stress it generates on human behaviour. **Results and conclusions:** The main conclusions of the study include the convenience and free nature of WhatsApp that drive its use in the educational environment. It can be seen that the majority of students use this type of instant messaging applications also for issues related to university affairs -besides their personal lives-. In addition, it has been found that a very high percentage of the groups analysed are members of a study-related chat group or is included in conversation groups on academic subjects.

**Keywords**
Instant messaging, WhatsApp, Education, Student, University, Spain

**Contents**

Translation of paper by **Yuhanny Henares**
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## 1. Introduction

The use of smartphones and their corresponding mobile applications as communication tool between users and as pedagogic tool is an increasing reality in the context of the digital society (Organista-Sandoval, McAnally-Salas and Lavigne, 2017). Since 2012, the instant messaging services, technically known as SOMI or SOM after its English acronym (Services Over the Messenger), have popularized. Initially they were text messages, but currently the options are very wide (second generation), allowing to send stickers and audio or video messages so to even offer live conversations (videoconferences).

According to *Panel de Hogares de la Comisión Nacional de los Mercados y la Competencia* (Home Panel on National Commission of Markets and Competence – CNMC in Spanish), in the end of 2017 the daily use of instant messaging services by Spanish individuals, such as WhatsApp, almost doubles the calls by mobile and fix telephone. The instant messaging is used by six out of 10 Spanish individuals several times a day (60%), a number that is much higher than the daily use of the calls made from mobile phones (24%), fixed telephones (12%) or 'online' calls (4%). SMS have almost fallen in disuse and are used on rare occasions. Almost 60% of Spanish individuals never send them (CNMC, 2017).

In the Spanish digital context, "in the past three years, the WhatsApp instant messaging traffic multiplied by eight" (Fundación Telefónica, 2017: 76). From young individuals, 81.7% use the instant messaging services in a systematic manner, surpassing those of social networks in volume of users (2017: 47-48). In this sense, the approach of instant messaging towards other forms of conversational communication in the virtual environment (Rubio-Romero and Perlado, 2015: 91), such as social networks, is confirmed as an increasing reality and, partly, as substitute.

It is also confirmed that, for the first time, the instant messaging incorporates to the work environment as another communication channel. In aggregated data, 59.8% of Internet users use it for professional purposes to communicate with workmates. The number increases to 73.7% among the younger users' range (20-24 years old).

In this context, this research enquires into this use in the university context, considering it as an extension of the work dimension of Telefonica's study. The second and third-cycle studies can be considered as a previous stage to the work environment, where relationship and behaviour habits are generated or potentiated and that will keep developing subsequently in the business world.

The app chosen for the study is WhatsApp, the most used application up to the point of becoming the first instant messaging tool in Spain, replacing the phone call to a great extent (Rubio and Perlado, 2015: 90). It is used by 92.8% of mobile phone users (AIMC, 2017). According to EGM (second wave

2018), 96.5% of individuals between 20 and 24 years old, the group where the university student is comprised in, use Internet daily (AIMC, 2018).

Together with other common types of instant messaging like Facebook Messenger, used by 87% of national mobile phone users, Twitter by 48.9% and Instagram by 40.4% (AIMC, 2017), the WhatsApp application is used 32.11 minutes per day, a number that increases for youth and specially among women (Montag *et al,* 2015), therefore it is likely to generate some kind of addictive behaviour and cause stress. However, neither the DSM (Diagnostic and Statistical Manual of Mental Disorders), namely, the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association (APA, 2018), nor the DSM-5 (International Classification of Diseases), manual published by the World Health Organization (WHO), have the disorder noted by this study included among their descriptions. It is worth mentioning that, at the end of the second section of the aforementioned manual, in the chapter related to other problems that can be object of clinical care, there is the mention that, without being considered mental disorders, the problems regarding education must be addressed (V62.3), as well as other problems about the social context (i.e. V62.89, V62.4 and V62.9). In any case, the gambling disorder is the only recognized non-substance related addiction and with a mediating screen (American Psychiatric Association, 2014). The rest is under ongoing scientific debate in the moment this paper was written, with critical positions (Frances, 2013).

This sort of instant messaging applications applied to the university life, especially WhatsApp, depicts several advantages, as indicated, among others, by Andújar-Vaca and Cruz-Martínez (2017: 44): "to promote the contact between students and professors; to foster the interaction between students and encourage academic cooperation; to motivate active learning; to provide an instant feedback; and develop high expectations." Simultaneously, another study (Sánchez and Lázaro, 2017) shows the addiction to said application among Spanish teenagers. It is high, since level 2 was found in 37% of the sample and level 3 in 63% (level 1 standing for no addiction and 4 absolute dependency). These data confirm the study of Fondevila-Gascón *et al* (2014), where it was tested that the use of free instant causes stress and anxiety, which might impact the learning of whomever suffers dependency. The apparition of syndromes such as the "phantom vibration" (Balding, 2012) is a consequence of the obsession these media generate in users who, due to fear of losing control, develop symptoms that are typical of the abstinence syndrome (Molina del Peral, 2012).

The use of this kind of instant messaging impacts work and social habits of individuals (Ljungstrand and Af Segerstad, 2000), therefore its consequences are being investigated by the scholar community from different fields, including the pedagogic, psychological, labour, relational, wellbeing and healthcare field, among others. In the university area, with the arrival of the *millennial* generation to the classrooms, the massive use of technology by students is confirmed, with the use of the second generation of instant messaging (Gallardo, 2014). The *millennials* transfer the habits acquired during their teenager stage to the university, where technology, with WhatsApp as preeminent element, turned into a strategic socialization tool (Vidales-Bolaños and Sádaba-Chalezquer, 2017).

In the first studies performed about addiction to technology it was indicated that there is a tendency to associate personality with frequency of use and addiction to said applications (Sultan 2013). Subsequent studies demonstrated that personal traits, gender and anxiety have a direct relationship with the use, often conflictive, of the application (Tresáncoras, García-Oliva and Piqueras, 2016). However, there doesn't seem to be a correlation between the level of addiction and social abilities developed by subjects (Sánchez and Lázaro, 2017).

Buschmann Iversen, Melby and Toussaint (2013) study how the use of instant messaging provides flexibility in the communication between employees, improving coordination and logistics of the medical staff in their patients' healthcare. Other studies advocate for direct and indirect improvement of results and the work performance when instant messaging is used at work (Sheer and Rice, 2017).

The area of greater study about the impact that the mobile messaging produces on individuals and their results is the educational area. It has been tested that students using instant messaging applications have more facility for teamwork (Hrastinski et al, 2012; Jatuf, 2014), in an increasing dynamic of interactivity such as HbbTV (Fondevila-Gascón, 2012), when obtaining higher cooperation indexes, but not necessarily improving the quality of their work (Hyewon, Lee and Minjeong, 2014). In addition, it allows students to optimize or keep their personal relationships (Quan-Haase and Young, 2010).

Huang and Leung (2009) confirm that, despite the fact that students obtain five forms of gratification (interpersonal utility, social utility, convenience, information and entertainment), the use of instant messaging can negatively impact their academic performance. Other studies demonstrate that, among youth, the improvements on communication and shared information observed in work environments do not take place, turning the instant messaging applications into hurdles for their learning, since they constitute a distraction for students during classes (Dietz and Henrich, 2014). The students are not capable of stablishing a balance between their online and off-line activities, thus worsening their performance (Yeboah and Ewur, 2014).

However, the results of other African studies performed among university students seem to indicate that they perceive the WhatsApp application in a very positive manner, because they understand that the chat groups between students allow them to have access to resources generated by peers, improve their tasks and promote a learning outside the academic context (Rambe and Chinpunza, 2013). Furthermore, the groups with professors are interesting for their collaborative learning and useful for their education (Bansal and Joshi 2014; Bouhnik and Deshen, 2014).

The objective of this study is to analyse the use of WhatsApp in the university education field, the advantages and drawbacks, as well as the effects of the use of said applications in young users. It must be considered that, in the Broad Band Society context (Fondevila-Gascón, 2013), every individual puts his or her trust to get informed in a melting-pot of friends, acquaintances and contacts, built *ad-hoc*, that have been replacing the role of media over time in a progressive manner. In the summit of trust there are the individuals with which there is one-to-one contact, a role that, in the digital environment, is fulfilled by the instant messaging, the channel used more often by users, hence also performing a substantial informative role in their lives (Marqués-Pascual, 2016; Fundación Telefónica, 2017).

In this context, it is analysed how young university Spanish students use the instant messaging applications, specifically WhatsApp, identifying potential abusive uses, addiction to messaging and the potential stress or anxiety that its use might generate, besides attempting to determine whether it is an application that should be implemented in the educational area.

## 2. Methodology

The study performed is of observational and descriptive nature of the habit and behaviours of the individuals in the sample. The technique used was quantitative. It was conducted in Universidad de Navarra (Pamplona, Spain) during the first months of 2017, following an interview model adapted to the personal survey similar to the one used by Fondevila-Gascón *et al* (2014), whereas the model of the Kimberly Young test about Internet addiction for the use of instant messaging is adapted. The study is framed within the analysis of promoter research groups about the technological effects in the university, so to perform an evolutionary monitoring and launch comparisons. Despite the fact that the empirical part was conducted physically in Pamplona, there is a great diversity of origin among respondents, therefore the results can be extrapolated to the Spanish university scenario.

A total of 340 surveys was completed. After screening out the sample, eight of them were discarded because contradictions were identified in answers for similar questions or there were unanswered questions. The final sample was composed of 332 surveys to university young individuals, of which 144 are men and 188 are women.

Since it is a survey that adapts personal interview techniques, responses correspond to the self-perception of users about frequency and use purposes, advantages and drawbacks, the stress index generated and the utility of its potential implementation in the academic field.

The sample distribution by age was composed of university youth between 18 and 23 years old (Graphic 1).



Graphic 1. Sample Distribution by age N=332
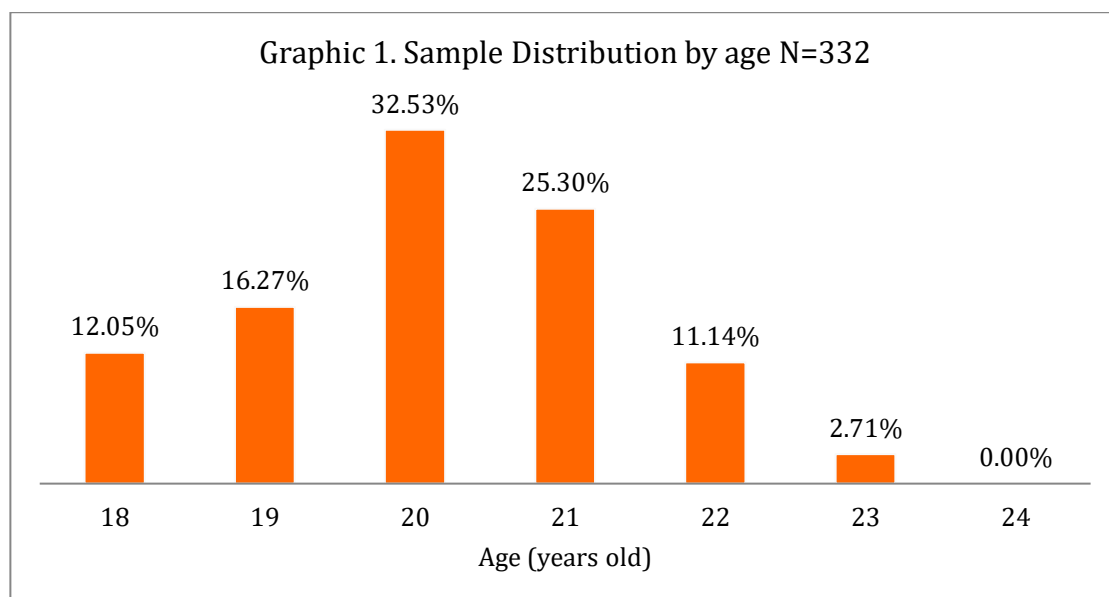
Source: authors' own creation

Respondents have the Spanish nationality in their entirety and come from different autonomous communities. Navarre is the one of greater origin in the sample (47.29%), due to the location of the university where the study was conducted (Graphic 2).

Graphic 2. Sample Distribution by Autonomous Community of origin
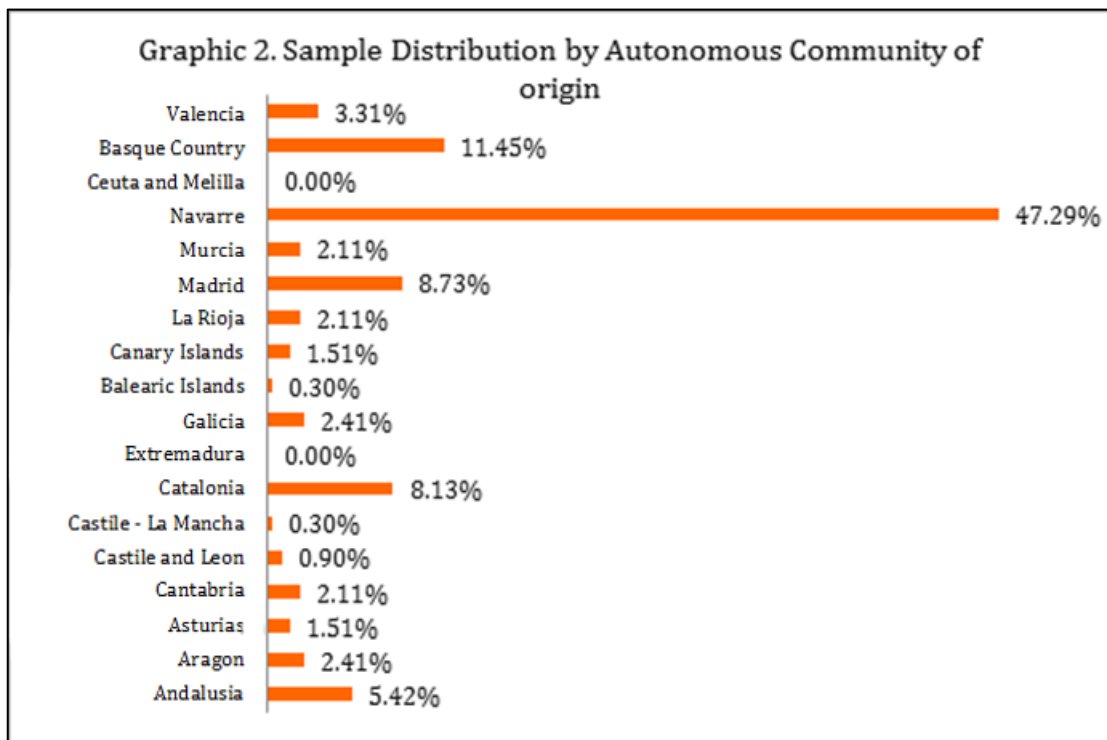
Source: authors' own creation

Respondents are students of Universidad de Navarra, belonging to degree studies from different faculties, including the school of Architecture, the Faculty of Economic and Business Sciences, the Faculty of Law, Humanities, of Social Sciences or Health Sciences, among others (Graphic 3).



Graphic 3. Sample Distribution by studies
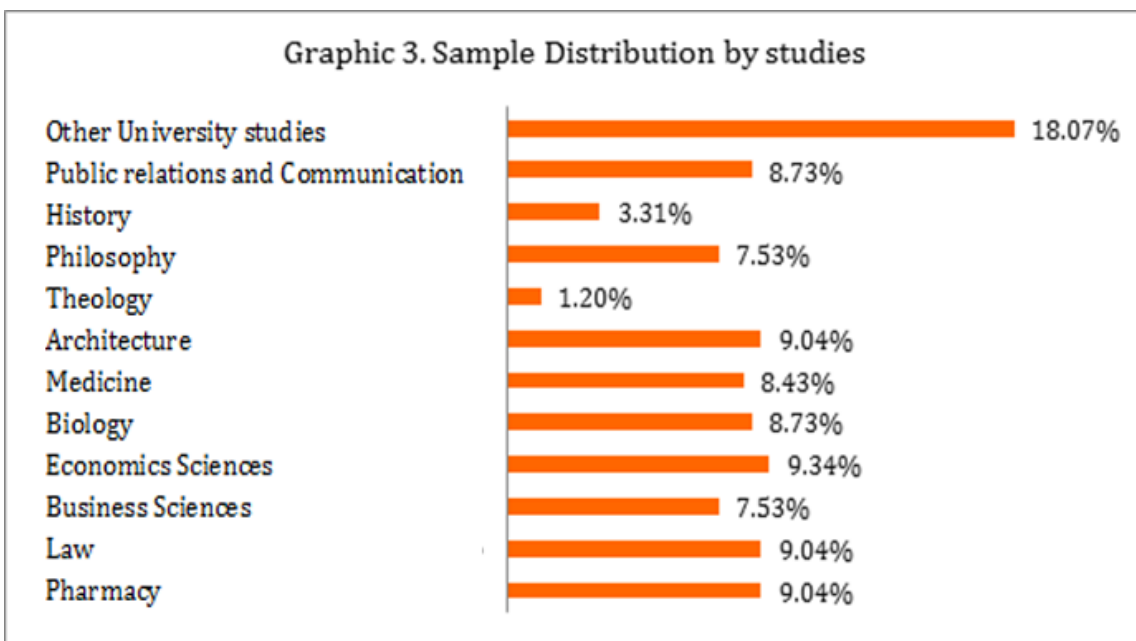
Source: authors' own creation

All respondents have a smartphone, therefore, all of them have Internet access and the possibility to have instant messages applications available. Android is the operating system used by 54% of users, and 46% are users of the iOS Apple system. From respondents, 46% have an iPhone, 20% a Samsung, 4% a LG and the remaining 30% have smartphones from other brands. The distribution by telephone company is as follows: 43% Movistar, 26% Vodafone, 16% Orange, 4% Yoigo and 11% other companies. The sample distribution by monthly expense in mobile phone (Graphic 4) shows that only 12% of respondents cover said expense.
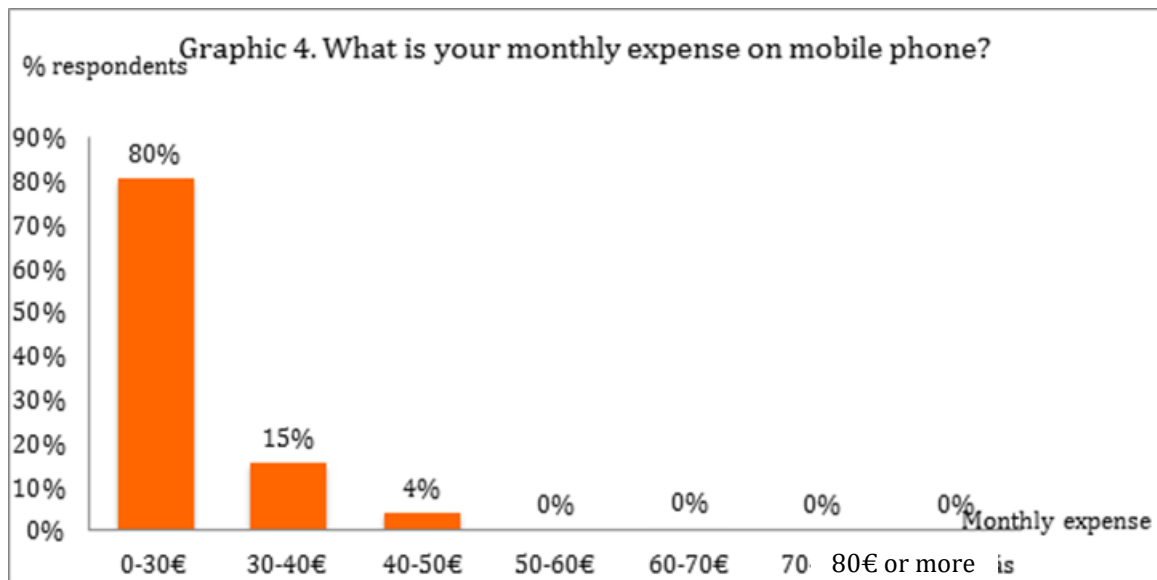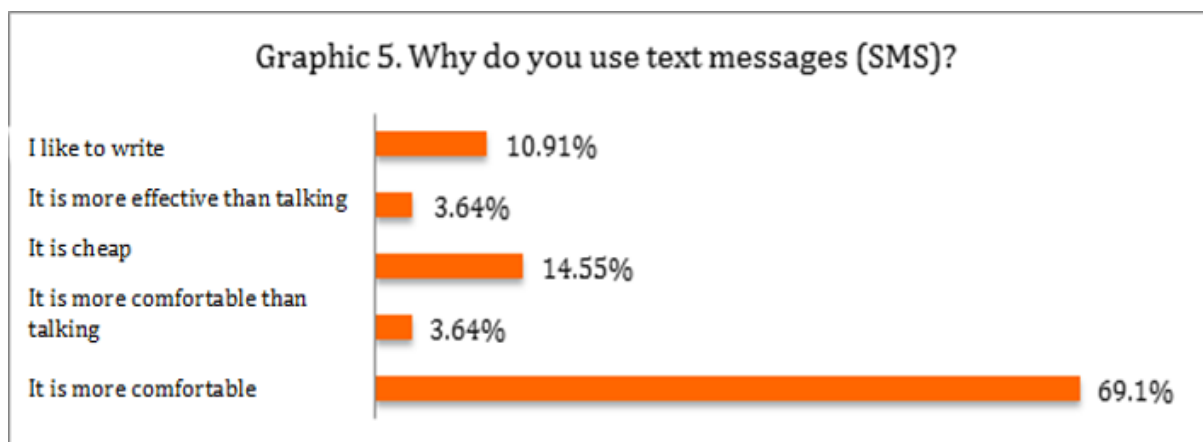


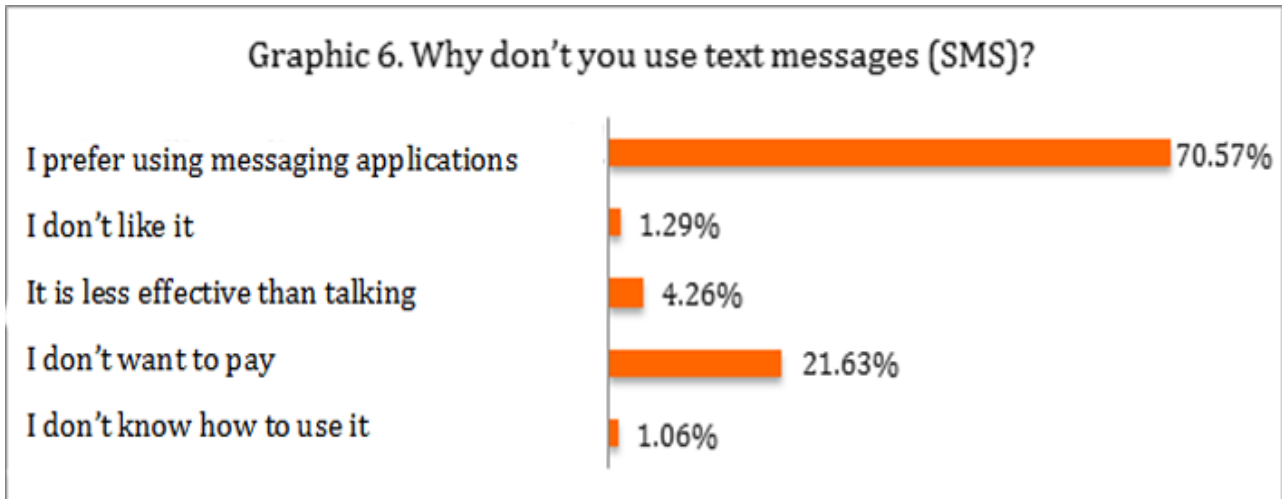Source: authors' own creation

# 3. Results
## 3.1. Use of text messages (SMS)

In a first instance, respondents were asked about their use of conventional text messages (Short Message Service or SMS). From respondents, 83.7% stated not using this kind of messages, that only 55 individuals in the sample sent (16.3%). Among the reasons why that group of respondents kept using text messages, there outstand comfort (69.1%) and low price (10.91%) (Graphic 5).
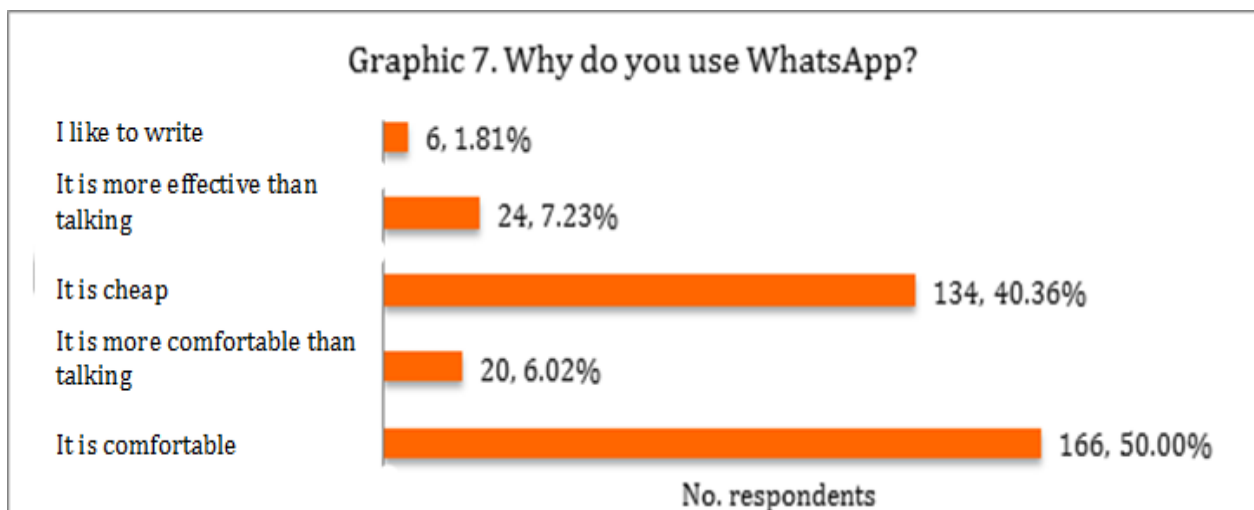


Source: authors' own creation

Those respondents that no longer use the conventional messaging stopped to do so because, as they manifested, they prefer using instant messaging applications (70.57%) or not to pay for that service (21.63%) (Graphic 6). Therefore, the main reasons why users decide using one instant messaging service or another are comfort when using the service and the related expense associated to its use.



Graphic 6. Why don't you use text messages (SMS)?

- I prefer using messaging applications — 70.57%
- I don't like it — 1.29%
- It is less effective than talking — 4.26%
- I don't want to pay — 21.63%
- I don't know how to use it — 1.06%

Source: authors' own creation

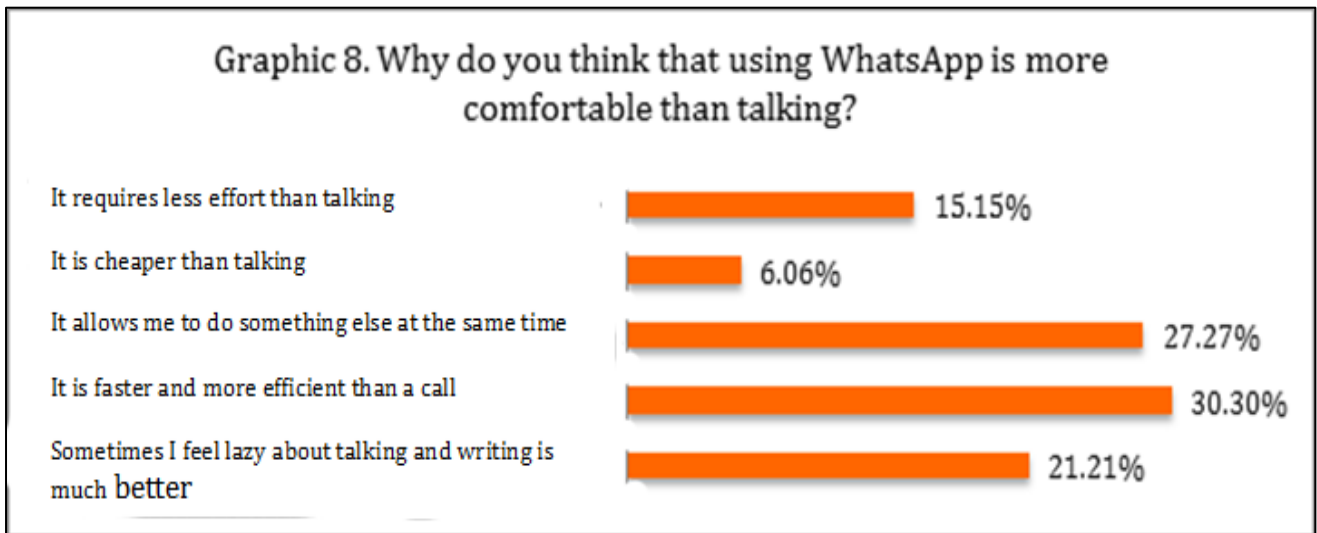## 3.2. Use of WhatsApp: reasons and types

The totality of the sample uses the instant messaging application WhatsApp on a regular basis, paid by 28% of respondents. The mean reason why they use the application is due to its comfort (50% of the sample), followed by its free nature (40.36%) (Graphic 7).



Graphic 7. Why do you use WhatsApp?

- I like to write — 6, 1.81%
- It is more effective than talking — 24, 7.23%
- It is cheap — 134, 40.36%
- It is more comfortable than talking — 20, 6.02%
- It is comfortable — 166, 50.00%

No. respondents

Source: authors' own creation

From respondents, 40% use, in addition, other types of instant messaging applications. Thus, 19 out of the 332 respondents are users of Telegram, 3 of Line and 111 users of other applications, including iMessage or Facebook Messenger.

From the sample, 18% state that using WhatsApp is more comfortable than talking by the phone to communicate, versus 74% who indicate it is not. However, respondents believe that it can be faster and more effective than a call, besides allowing them to perform other activities at the same time (Graphic 8). Hence, efficiency and intimacy provided to the user during use of said application are the differentiating characteristics that promote the application is used in such an extended manner.



Graphic 8. Why do you think that using WhatsApp is more comfortable than talking?

| | |
|---|---|
| It requires less effort than talking | 15.15% |
| It is cheaper than talking | 6.06% |
| It allows me to do something else at the same time | 27.27% |
| It is faster and more efficient than a call | 30.30% |
| Sometimes I feel lazy about talking and writing is much better | 21.21% |

Source: authors' own creation

Among the most frequent uses of WhatsApp, there outstand the actions of sending messages, pictures, video, audio and Word or PowerPoint files. From respondents, 6.82% of them only send messages, and 34.42% do not send files in formats such as Word or PowerPoint but send messages, audio files and pictures instead. The remaining users, 57.27% use the complete services of the application.

### 3.3. Use of WhatsApp: excesses and addiction

Only 3% of respondents do not use WhatsApp more than 10 times a day and 52.40% admit sacrificing hours of sleep because of having WhatsApp conversations at night (Graphic 9). From respondents, 17.16% sacrifice hours of sleep a minimum of 3 to 4 nights per week.

It is often believed that the use of instant messaging applications, such as WhatsApp, facilitates distraction in academic performance (Lira-Rodríguez *et al,* 2017). It is also considered that it increases boldness and it helps to show feelings. The study performed by Fondevila-Gascón *et al* (2014) demonstrated that said perception was unfounded, because only 9% of his sample believed that the application provided greater intimacy and only 24% preferred to express their feelings through an instant message instead that in person.
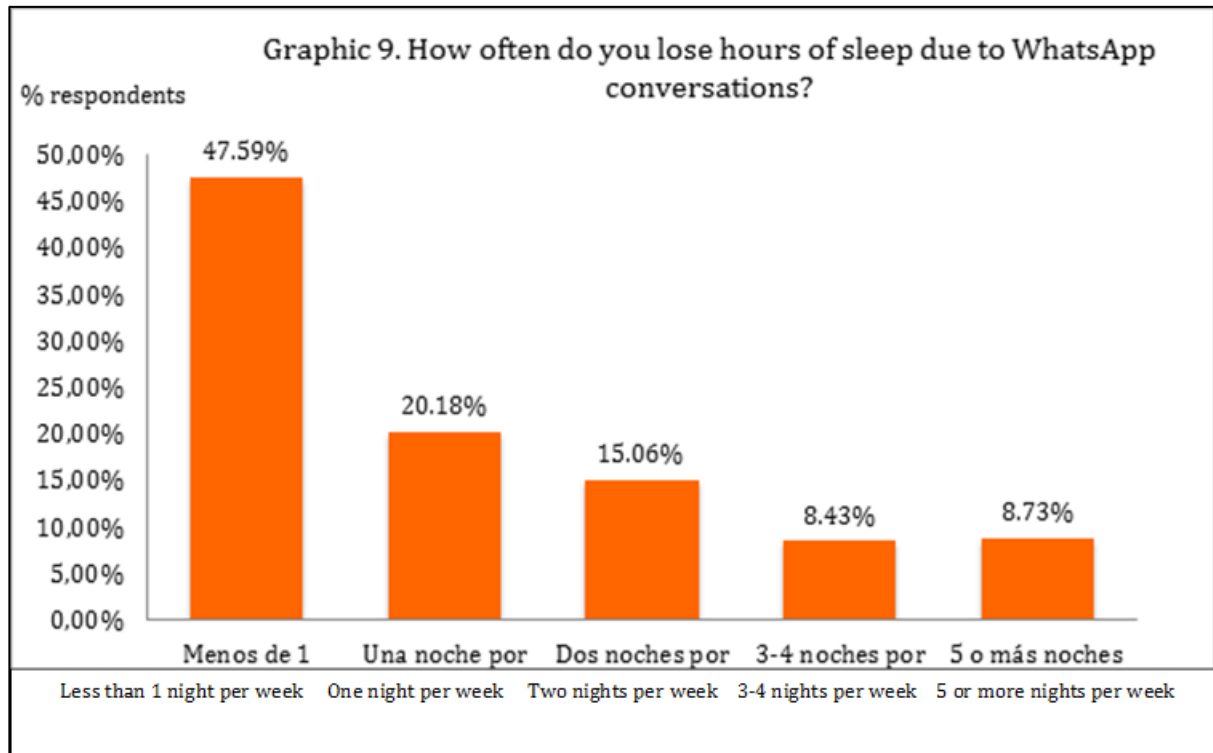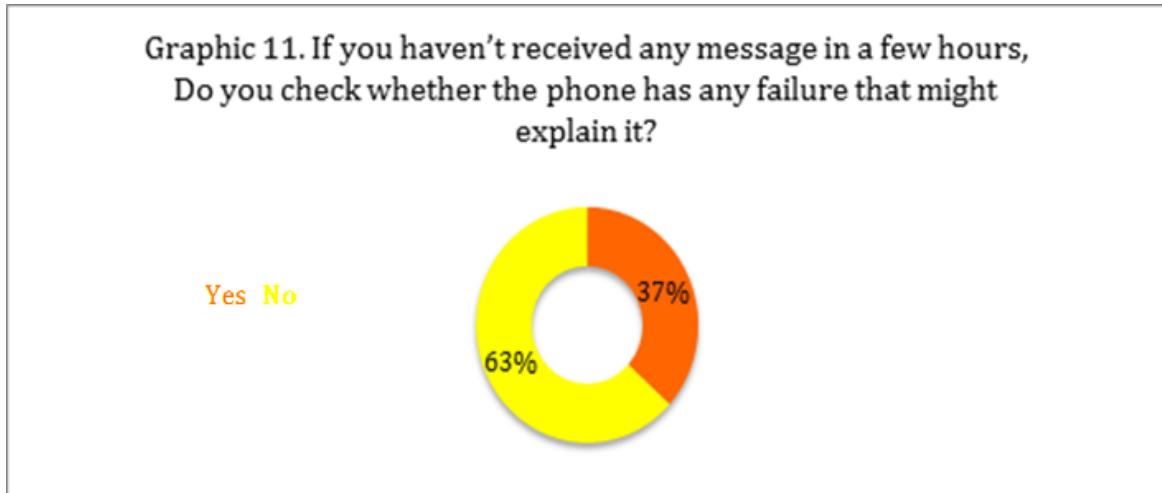
Source: authors' own creation

The results obtained in the present study are very similar, confirming the previous data: 6.63% of respondents consider WhatsApp as more intimate than talking, and 26.20% and 32.23% state it is easier for expressing feelings than to do so in person or talking by the phone respectively. However, 46% of respondents consider that on specific occasions it is better to say something using WhatsApp instead of doing so calling by the phone (Graphic 10).
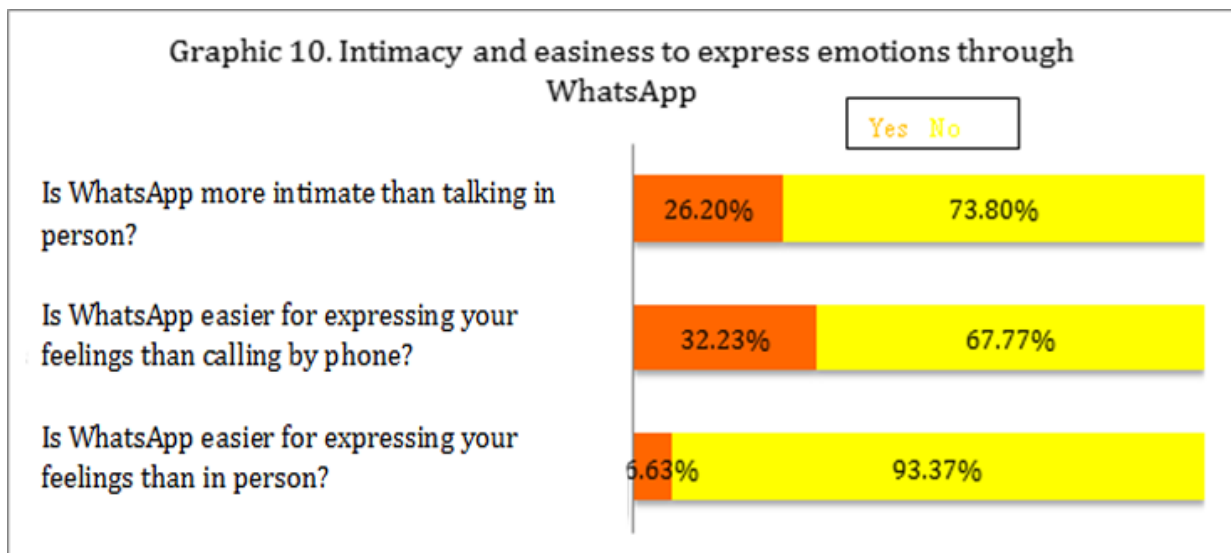


Source: authors' own creation

From respondents, 67% admit to often look the WhatsApp icon to confirm whether they have any message, although they haven't received a sign (vibration or sound) indicating so. From them, 50%

occasionally feel that their smartphone is vibrating or ringing but, when confirming it, they discover they don't have any messages or calls. This "phantom vibration" (Balding 2012) is a consequence of the anxiety generated when not using the device for a specific period of time. In fact, 37% mentions to check the mobile phone for possible failures given the case WhatsApp messages are not received in a few hours, which indicates the severity of the dependency developed (Graphic 11).



Source: authors' own creation

The mobile is always turned on by 75% of respondents. The first activity in their day for 54.22% of the sample is to confirm whether they have messages or calls, and it is also the last activity for 59.04%. In addition, its use is also frequent while walking. WhatsApp messages are sent by 76% of respondents while walking, and they even use the application while going to the bathroom, 28.31% occasionally and 55.12% always.

The excessive use of the application is understood by 57.23% of respondents, who indicate they would like to use WhatsApp less often. When it comes to determining the use of the application by others, 83.13% state that people use WhatsApp too much.
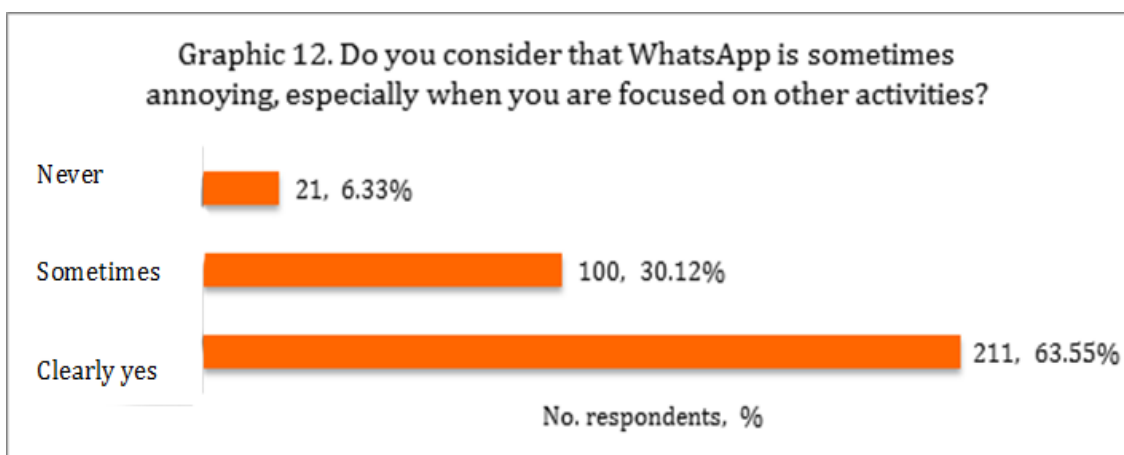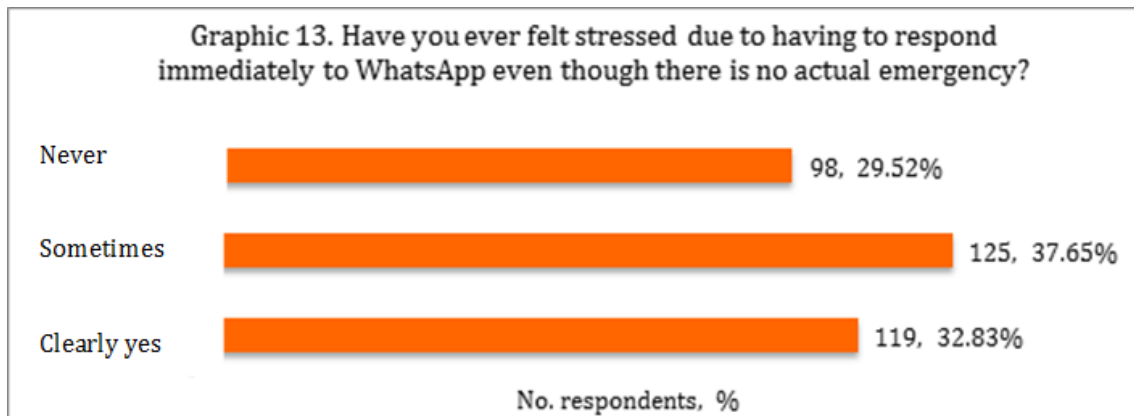


Source: authors' own creation

Almost the totality of respondents mentions to feel occasionally or steadily annoyed about WhatsApp (Graphic 12) and most of them feel stressed about having to answer immediately to the WhatsApp

messages they receive, although there is no actual urgency in it (Graphic 13). From respondents, 53% state not too expect a quick answer when sending one of these messages.

These data are concerning since they show a high index of addiction and dependency, due to the fact of knowing at all times whether they have received a call or message. This entails concern given the case it is negative. Most of respondents and not able to leave the application aside while doing another activity, which turns it into a nuisance, beyond the perception of multitasking generation and the advantages a suitable message could depict in a specific work situation.



Graphic 13. Have you ever felt stressed due to having to respond immediately to WhatsApp even though there is no actual emergency?

| | |
|---|---|
| Never | 98, 29.52% |
| Sometimes | 125, 37.65% |
| Clearly yes | 119, 32.83% |

No. respondents, %

Source: authors' own creation

The level of anxiety that WhatsApp generates when respondents do not have access to the application or Internet, and therefore its use, is rather elevated. From respondents, 24.4% state feeling angry if they discover they don't have a mobile connection nor Internet access, and 43.37% sometimes. However, 46.11% admit being able to spend a period of time without using WhatsApp and not feeling isolated.

Contradictorily, only 23.80% wouldn't feel disconnected from their social environment if the messaging application was eliminated from their phone. The opportunity cost (potential messages that contribute with value in the short term) underlies in that nuisance given the case of lack of connectivity. The '*always on'* is a cornerstone of the Broad Brand Society (Fondevila-Gascón, 2013), that turns the Internet connection into a *utility* similar to traditional ones (water supply, telephone, electricity or gas) based on the constant need for contents (Fondevila-Gascón, 2010).

From respondents, 46% admit to ever having the feeling that WhatsApp is not worth the stress it generates, although 100% of the respondents in the sample have the application and use it often. This demonstrates once more the dependency and anxiety it generates for a wide percentage of youth.

### 3.4. Uses of WhatsApp with academic purposes

To try to identify the current use of the instant messaging application in the academic field, its advantages and drawbacks, a series of questions were done about its use and its current proliferation.

WhatsApp is used by 97.29% of users for university related issues and 96.99% belong to some group chat related to their studies. Therefore, WhatsApp is an application spread and used by Spanish university students for academic purposes (Graphic 14). From respondents, 87.05% share links related to the university or studies, either personally or through these groups, which indicates that students

share educational content through WhatsApp and it seems to support the results of Rambe and Chinpunza (2013).
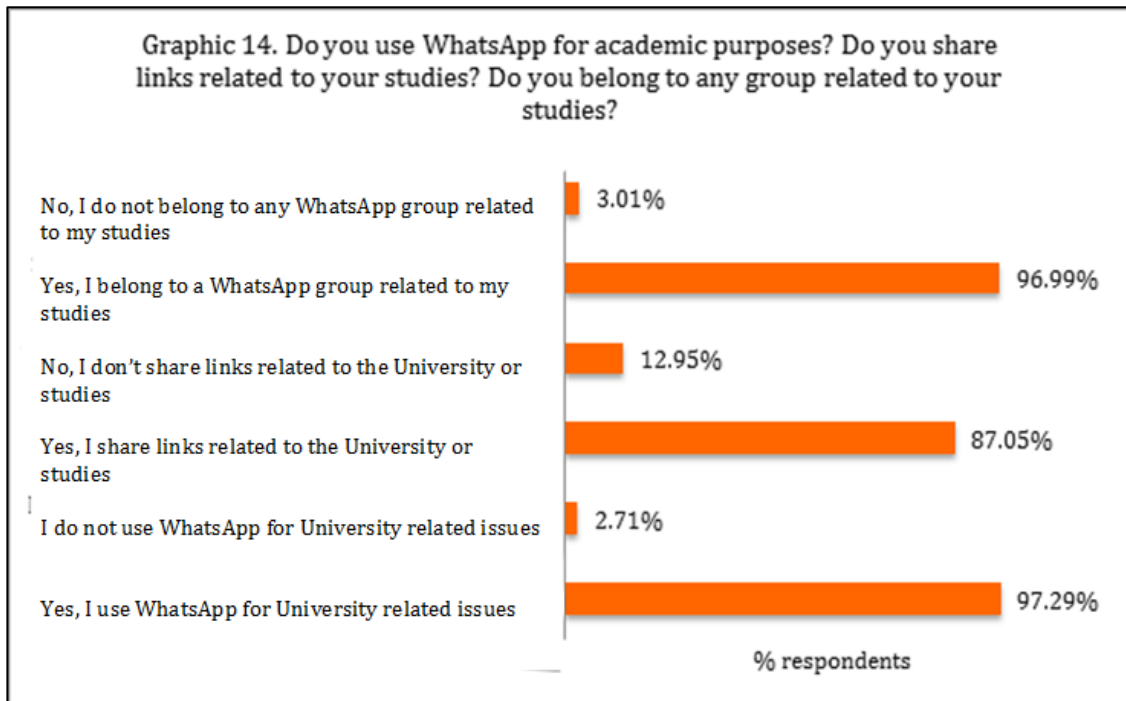


Source: authors' own creation

However, only 23% of respondents communicate with university professors through WhatsApp. Among those who do not, 49.22% consider that doing so could be useful and, therefore, after discarding those users who use it, but who do not consider it useful (5.30%), 59.64% of students admit the utility of implanting WhatsApp as medium between professor and student.

## 4. Discussion and conclusions

Technology, more specifically, instant messaging applications like WhatsApp, and its application to the educational world generates a dilemma in our society. On the one hand, it assumes great social dissemination, thus its use can be quite beneficial due to efficacy, immediacy, cost or facility reasons; on the other hand, it can become a huge threat due to the dependency and anxiety it may generate, as well as its consequences.

In the study, it is demonstrated that Spanish university students manifest a high level of dependency towards instant messaging applications such as the one studied here. A high percentage of them suffers anxiety and stress because of the excessive use, that can lead into both health problems as well as a worse academic performance. About 97% use the application more than 10 times a day, and 52.40% admit losing hours of sleep due to having night conversations through WhatsApp. From respondents, 50% suffer the "phantom vibration" syndrome and 37% check their phone given the case no messages or calls are not received in a few hours. For 54.22% and the 59.04%, to read or write a WhatsApp is their first and last daily activity, respectively.

Another sign of the addiction youth suffer is that 93.67% of respondents believe it is annoying, more than two thirds feel stress about having to answer immediately and 53.89% admit they would feel lonely if they couldn't use it for a time.

From the perspective of the educator, this dependency is rather concerning, because it can impact in a direct manner, thus reducing concentration and therefore the performance of students since it becomes a clear source of distraction. It can also impact studies in an indirect manner, because it generates stress and anxiety, which accentuate this decrease on academic performance.

However, its use is being implemented in a progressive manner in the educational world. From respondents, 97.29% use WhatsApp for university related matters, and 96.99% belong to groups related to their studies. Nevertheless, only 23% of respondents relate with professors through this application. It is considered a good medium for this kind of relationships by 59.64%. Therefore, WhatsApp, becomes a platform used in the academic context among students, but not widely in the student-professor relationships.

In conclusion, the WhatsApp instant messaging generates stress and anxiety among young users and, despite its use is more and more extended in the educational field due to the advantages it provides, it can reduce the academic performance. The study has internal and external validity; therefore, it can be extrapolated to other countries in which the penetration and availability of instant messaging applications among young students is similar.

All study participants were volunteers chosen randomly and belong to different Spanish autonomous communities. They are studying different study degrees across several university faculties. The mean error does not exist, since the sample was depurated, hence eliminating those surveys with contradictory answers. In addition, there was no chance for maturation or sample loss among subjects since the personal surveys did not take longer than 15-20 minutes for completion (adapting the interview technique). The instructions and questions exposed to subjects were exactly the same, without a blinded procedure, and since they were completed in the library or inside the faculties, under similar situations, the influence of the environment is minimum.

We consider that in the analysed environment, WhatsApp is not used in a special manner, since it is not an implanted mechanism nor used by said institution for professor-student relationships. Since it is a free application that needs a minimum tariff of Internet access, there is no bias due to income. The researchers of this study are impartial towards the application. Due to the reasons exposed, we consider the study has the necessary internal and external validity.

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