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STUDENT'S SOCIAL NETWORKS PROFILES, PSYCHOLOGICAL NEEDS, SELF-CONCEPT AND INTENTION TO BE PHYSICALLY ACTIVE

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Abstract

This cross-sectional study aimed to identify social networks addiction profiles and whether there is a relationship with basic psychological needs, self-concept and intention to be physically active. The participants were 276 Spanish University Students (115 men and 161 women, M_{age}= 28.47; *SD*= 8.65) from 10 different universities through incidental sampling. Two profiles were found: a profile characterized by high scores in addiction symptoms, social usage, geek treats and nomophobia; a profile characterized by extremely-high scores in addiction symptoms, social usage, geek treats and nomophobia. Results revealed significant differences between the profiles in autonomy, competence and emotional self-concept. The second profile revealed higher scores in the aforementioned variables and showed lower age in their participants (*M*= 25.69; *SD*= 6.93) in comparison with the high social network profile (*M*= 30.10; *SD*= 9.15). The presence of important levels of addiction symptoms in both profiles of the sample suggests that interventions should be conducted to prevent the maladaptive outcomes of addictions in social media.
KEY WORDS: *cluster analysis, university, students, social networks*.

Resumen

Este estudio transversal tuvo como objetivo identificar los perfiles de adicción a las redes sociales y si existe relación con las necesidades psicológicas básicas, el autoconcepto y la intención de ser físicamente activo. Participaron 276 estudiantes (115 hombres y 161 mujeres, M_{edad}= 28,47; *DT*= 8,65) de 10 universidades españolas en un muestreo intencional. Se encontraron dos perfiles, uno caracterizado por puntuaciones altas en síntomas de adicción, uso social, uso friki y nomofobia, y otro caracterizado por puntuaciones extremadamente altas en síntomas de adicción, uso social, uso friki y nomofobia. Los resultados revelaron diferencias significativas en: autonomía, competencia y autoconcepto emocional. El segundo perfil mostró puntuaciones más bajas en todas esas medidas y tenían menor edad (*M*= 25,69; *DT*= 6,93) que los del primer perfil (*M*= 30,10; *DT*= 9,15). La presencia de niveles importantes de síntomas de adicción en ambos perfiles de

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la muestra sugiere crear intervenciones para prevenir los resultados desadaptativos de las adicciones en las redes sociales.
PALABRAS CLAVE: *análisis de conglomerados, universidad, estudiantes, redes sociales*.

Introduction

The consumption of social networks has increased exponentially during the last decades due to the easy access of smartphones, tablets, and computers with internet connexion (Alharthi et al., 2017). In fact, 41.7% of European adults report that they use daily social networks (Hruska & Maresova, 2020). Facebook is the most popular platform with more than 2.449 millions active users all around the world. Also, other well-known networks in young people are Twitter, Instagram, Tik Tok or WhatsApp (Hootsuite, 2020). As such, due to the high presence of this consumption in young people, researchers have focused their attention on the consequences that might produce in behaviours (Malo-Cerrato & Viñas-Poch, 2018). The existence of the inappropriate usage of technologies might have negative effects on wellbeing and psychological adjustment in children, adolescents, and young adults (Baker & Algorta, 2016; Brooks, 2015; Fox & Moreland, 2015; Lin et al., 2016; Machimbarrena et al., 2019; Morán-Pallero & Felipe-Castaño, 2021; Oberst et al., 2016; Sampasa-Kanyinga & Lewis, 2015), engendering problems in the social relationships (Tokunaga, 2017) or loneliness (Ndasauka et al., 2016), among others (Ho et al., 2017).

This use of social networks in adolescents and young adults, not only could lead to an excessive implication, but it also may provoke a high-dependency and lack of self-control under their behaviours. Furthermore, anxiety and craving symptoms appear when the person cannot access temporarily to the net, increasing the tolerance in a compulsive necessity to spend more time online (Billieux et al., 2015; Muench et al., 2015; Müller et al., 2017; Ryan et al., 2014). Even, nomophobia is considered a situational and social phobia that makes individuals experience a deep, irrational, and disproportionate fear of not being able to use the mobile phone or of running out of coverage and/or battery and, therefore, having to temporarily relinquish their online social identity (Bragazzi & Del Puente, 2014; King et al., 2013; León-Mejía et al., 2020). Subsequently, social networks represent a field of integration in which those that do not spend enough time on social media are at a higher risk of social exclusion. Also, social networks could be used to communicate with family and friends for entertaining or when people are boring (Sponcil & Gitimu, 2013). Following that, Lenhart et al. (2010) indicated that 72% of the students between 18 and 29 years old have a profile on social networks, more than 57% have different profiles, and 45% use the profile at least once a day. Besides, Quan-Haase and Young (2010), revealed that 82% of the students used Facebook several times a day in which the younger people accessed more frequently. Besides, another work such as Sponcil and Gitimu (2013) showed that all students consume social networks and 59,4% access several times a day. Regarding the time spend on social profiles, Hernández et al. (2017) fixed a range between one and

three hours a day. Particularly, in the case of Facebook a recent study showed that participants overestimate the time spent on this social network (they affirm that they spent 4 hours when it was 1.3 per day), although they underestimate the number that they utilize this social network (Ernala et al*.,* 2020).

Contradicting the aforementioned studies, other authors showed that the students might be connected more than five hours a day to satisfy their addiction (Fernández-Villa et al., 2015; Hernández et al*.,* 2017). According to that tendency, Bolaños (2015) confirmed that social networks are influencing adolescents and young people learning, uncontrolled behaviour, isolation, seeking continuous stimulation, and a strong desire to be online. Cajas-Tibanta (2019) revealed that this tendency provokes that 47% have excessive use of social networks, due to the necessity to be on the net as a relief measure. The 42% are obsessed with social networks, indicating that as soon as they wake up, they are connected. Finally, 11% determined that this lack of personal control in the usage is since they feel anxious when they cannot access it. Even though, this strong necessity might turn into the neglecting of the couple, relatives and friends.

In line with that paradigm, Siguencia and Verónica (2017) considered the social networks as an escape for those that have social and psychological needs. Psychological needs are defined as something innate, universal, and essential for health and wellbeing. It means that it constitutes a natural aspect of humans that applies to all people. Thus, once these necessities are satisfied the people live efficiently and they develop healthily, meanwhile, if there are not satisfied it might imply the existence of diseases or maladaptive outcomes (Valdivia, 2010). Therefore, social networks are essential nutrients for adjustment, integrity, and growing (Ryan, 1995). Moreover, Cajas-Tibanta (2019) revealed that satisfaction with psychological needs is related to the consumption of social networks. The aforementioned author indicated that 46% of the students feel satisfied with their relationship needs, 35% satisfied autonomy necessity, and 19% competence necessity. Furthermore, it added that the students that obtained higher scores in satisfaction of relationship necessity revealed an excessive use of social networks. The students that reached higher scores in autonomy are into a range of obsession in social networks. Those that obtained higher scores in competence necessity are in the range of lack of personal control in the usage of social networks.

On the other hand, Alfasi (2019) states that the visualization of the life events of others can affect the psychological well-being of those users who, based on this, make a negative comparison of themselves to others who apparently are in better conditions. Therefore, the prolonged use of social networks is associated with a greater social comparison and, as a consequence, self-concept may suffer variations. Self-concept is understood as the individual's perceptions of themself, based on their experiences with others and in the attributions that they make of their own behavior, as well as the concept they have of themself from a physical, social and spiritual perspective (Fuentes et al*.,* 2011; Marsh & O´Mara, 2008). In this sense, Hernández et al. (2017) point out that the probabilities that self-concept is related to the use of new technologies are quite high. In fact, in a recent study of Montes et al. (2019)

found out that the use of social networks influences self-concept, pointing out that any form of socialization, such as these platforms, are part of that environment where the adolescents strengthen their self-concept. Furthermore, these authors add that the highest relationships were with emotional self-concept in women, and with social self-concept in men, while the lowest scores were with physical self-concept in both cases. Thus, the physical self-concept can be considered as a necessity to be worked in adolescents since it is part of the body's self-image (Fernández et al*.,* 2015). Approaches to self-online (self-online perception and idealised projection of the self) have also begun, which may be of particular interest with the use of social networks (Ortega-Barón et al*.,* 2020).

According to Hernández et al*.* (2017), they indicated that the dependence caused by social networks, triggers adolescents to greatly reduce their outdoors practice of physical activity. Instead, they spend many hours sitting and sleeping less, since this time that they dedicate to being connected is usually very high, and in the evening. Subsequently, this has negative implications on physical health, such as tendinitis, muscle aches, eyestrain, and even obesity, among others (Bolaños, 2015; Cash et al*.,* 2012).

As a novelty of this study, the work is grounded on a person-centred approach in which the multivariate experience of the diverse negative characteristics of social networks might co-occur. As such, the present study performed profiles in which the participants of this study were grouped. Instead of considering the addictive characteristics of social networks in isolation, as the previous studies grounded in a bivariate approach performed (Bolaños, 2015; Fernández et al*.,* 2015; Hernández et al*.,* 2017; Marsh & O´Mara, 2008; Quan-Haase & Young, 2010; Sponcil & Gitimu, 2013). Moreover, the study followed a cross-sectional design with incidental sampling in which students from several Spanish universities were contacted through professors. Based on the aforementioned previous work, this study aimed to identify social networks profiles and whether there is a relationship with basic psychological needs, self-concept and intention to be physically active. Subsequently, the hypothesis established in this work were: high social networks consumers will be related to higher scores in psychological needs and social self-concept (Alfasi, 2019; Cajas-Tibanta, 2019; Hernández et al*.,* 2017; Montes et al*.,* 2019; Siguencia & Verónica, 2017). Furthermore, low social networks consumers will report lower scores in psychological needs, social self-concept and higher scores in physical self-concept (Alfasi, 2019; Cajas-Tibanta, 2019; Hernández et al*.,* 2017; Montes et al*.,* 2019; Siguencia & Verónica, 2017).

Method

Participants

A sample of 276 Spanish university students (115 men and 161 women; M_{age}= 28.47, *SD*= 8.65) participated in the study. The degree of the studies was: 128 Bachelor Students and 147 Master Students. The participants were from 10

universities and the most prevalent studies were: Social education (12%), psychology (8.3%), economy (4.7%), sports science (3.6%), criminology (2.9%), biology (2.1%), primary teacher (1.4%), computer engineering (1.4%), Secondary teaching master (43.1%) and others (20.5%). Concerning the occupation state: 79 were only studying, 40 were between jobs and studying and 157 were studying and working. Regarding the consume of social networks: 87 used three social networks, 84 used two social networks, 53 used more than three social networks, 49 used one social network and 3 did not use social networks. The average time spend on social networks were: 96 students spend 2 hours per day, 51 students spend more than three hours per day, 44 students spend three hours per day, 76 students spend one hour a day and 9 students do not reach spend one hour.

Instruments

a) *Five-Factor Self-Concept Questionnaire* (AF5; García & Musitu 1999). The AF5 was used to measure five self-concept dimensions: Academic (e.g., "I do my homework well"), Social (e.g., "I make friends easily"), Emotional (e.g., reverse-scored, "I am afraid of some things"), Family (e.g., "I feel that my parents love me"), and Physical (e.g., "I take good care of my physical health"). The 30 items are answered on a 99-point scale, ranging from 1: complete disagreement, to 99: complete agreement. The questionnaire reported suitable Cronbach alpha in all sub-scales as it ranged from .68 to .93.
b) *Intention to be Physically Active Scale* (Hein et al*.,* 2004), Spanish adapted version (MIFAU) by Expósito et al. (2012). The MIFAU is a self-administered questionnaire that consists of five items designed to measure the subject's intention to be physically active after passing through the various levels of education (primary school, secondary school). The items are preceded by the phrase "Regarding your intention to practice some physical/sporting activity". The responses were on a 5-point Likert scale, where 1 corresponded to "strongly disagree" and 5 to "strongly agree.rThe scale reported a good reliability index (α= .81).
c) *Basic Needs Satisfaction in General Scale* (BNSG-S; Gagné, 2003), Spanish translation by González-Cutre et al. (2015). The original scale is made up of a total of 21 items that measure the satisfaction of competency needs (e.g., "People that I know let me know that I am good at what I do"), autonomy (e.g., "I feel that I am free to decide how to live my life") and relationship (e.g., "I really like people with I socialize"). In each of the factors there were three items written negatively. The participants had to answer all items on a Likert-type scale from 1 (not true) to 7 (totally true). The reliability showed by the scale in this study was suitable: competence (α= .68), autonomy (α= .76) and social relationship (α= .76).
d) *Scale of Risk of Addiction-adolescent to Social Networks and Internet* ("Escala de riesgo de adicción-adolescente a las redes sociales e Internet", ERA-RSI; Peris et al*.,* 2018). The ERA-RSI is made up of 29 items grouped into four factors:

addiction-symptoms (9-Items) (e.g., "I use my social networks when working or studying"), social-use (8 items) (e.g., "I use the chat"), geek-traits (6 items) (e.g., "I need to know if the addressee has read my message") and nomophobia (6 items) (e.g., "I feel uneasy if nobody chats with me when I am online"). The responses range from 1= Never or almost never; 2= Sometimes; 3= Many times; and 4= Many times, or always. The scale reported a suitable index of reliability in all the sub-scales: addiction-symptoms (α= .78), social-use (α= .76), geek-traits (α= .64) and nomophobia (α= .71).

Procedure

The study followed a cross-sectional design in which incidental sampling was carried out. The research was carried out following international ethical guidelines and anonymity was preserved. Subsequently, the IP address of participants were not registered to ensure the anonymity. The researchers contacted students from 10 different universities trough professors from diverse studies. Once the researchers contacted the professors, they informed the students about the conditions for participating in the study. Then, the students who were interested in participating completed the online survey. Once they accessed the survey link, they signed an informed consent form and after they could begin with the survey questions. The surveys were completed when the students were at class. Besides, the devices that the students used to fulfil the survey were computers and mobile phones.

Data analysis

The SPSS 20 software was the program used to perform different analysis. Firstly, the data was filtered for multivariate outliers and reliability of scales. To determine the internal consistency of the instruments used, we estimated Cronbach's alpha. A value equal to or greater than .70 was considered adequate (Romano et al*.,* 2010). Furthermore, frequency analysis, standard deviation and means were calculated. Secondly, a two-step approach was used with ERA-RSI scores in which it was included the hierarchical and non-hierarchical cluster analysis (Hair et al*.,* 2010). Besides, the hierarchical cluster analysis with Ward's linkage method with squared Euclidian distance was conducted to identify the number of clusters. Then, a k means cluster analysis was performed using the most appropriate cluster solution identified in stage one. To understand profiles scores, following previous research that used cluster analyses, it was taken a standardized score of ± .50 to indicate high and low levels, with scores in between (i.e., +.50 to -.50) to indicate moderate levels (Gucciardi & Jones, 2012). Thirdly, to examine cluster group differences on basic psychological needs, self-concept and intention to be physically active, a MANOVA with students' was carried out. In the analyses, to prevent Type I error a significant multivariate effect (p< .05) was followed up with subsequent ANOVAs using Bonferroni adjustment (p< .005 for psychological variables). The effect of η^2 was considered medium with values between ≥ .07 and ≤ .14 and large

when $\eta^2 > .14$ (García et al., 2008). Finally, to explore potential demographic clusters confounds, a MANOVA with quantitative demographic variables (hours of physical activity and age) was conducted to examine cluster group differences on demographic variables. Moreover, a series of chi-square test was conducted with qualitative variables (gender, physical activity practitioners and the number of social networks consume); professional versus no professional athletes). Finally, the adjusted residuals were worked out to account for the variation due to the sample size in the chi-square tests.

Results

Social networks profiles

After the dendrogram and the agglomeration schedule coefficient, the most salient solution was two clusters. In addition, similar clusters were obtained from the non-hierarchical cluster analysis and the hierarchical. Subsequently, clusters were selected to maximize the differences across the sample of students in order to group them into profiles. MANOVA analysis revealed significant multivariate effect of cluster membership on social networks consumption (Wilk's Lambda= .36, $F(4.00)= 115.25$, $p< .001$; $\eta^2= .63$). Subsequently, ANOVAs analyses of variance showed that the two clusters were significantly different ($p< .001$) on all social network addiction variables. These outcomes ensure the tenability of the cluster solution (Table 1). The descriptive labels for the clusters are: (a) a high social network addiction profile characterized for high scores in addiction symptoms, social usage, geek treats and nomophobia; (b) an extremely high social networks addiction profile characterized for extremely high scores in addiction symptoms, social usage, geek treats and nomophobia.

Table 1
Standardized social networks clusters scores

Variables	High social network profile (n= 168)	Extremely-high social networks profile (n= 103)	F	p	η^2	Cronbach´s α
	M (SD)	M (SD)				
Addiction symptoms	1.73 (.31)	2.41 (.41)	234.15	< .001*	.46	.78
Social usage	1.78 (.31)	2.32 (.39)	151.07	< .001*	.36	.76
Geek treats	1.36 (.26)	1.80 (.38)	124.43	< .001*	.31	.64
Nomophobia	1.69 (.39)	2.30 (.51)	121.32	< .001*	.31	.71

Note: *$p< .01$.

Cluster group differences on basic psychology needs, intention to be physically active and self-concept

Results of MANOVA showed significant differences between the cluster on autonomy, competence and emotional self-concept (Wilk's Lambda= .90, *F(4)*= 3.04, $p < .001$, $\eta^2 = .09$). The follow-up ANOVAs reported significant differences in: autonomy, competence and emotional self-concept (Table 2). To sum up, the high social networks usage obtained the greatest scores in all those variables.

Table 2
Cluster differences in basic psychology needs, intention to be physically active and self-concept

Variables	High social network usage (*n*= 168)	Extremely-high social networks usage (*n*= 103)	*F* (3.04)	η^2	Cronbach´s α
Autonomy	5.32 (.87)	4.90 (.96)	13.38**	.05	.76
Competence	5.12 (.93)	4.77 (1.00)	8.22**	.03	.68
Relationship	5.65 (.80)	5.45 (.85)	3.70	.01	.76
Academic self-concept	75.68 (18.44)	71.63 (17.56)	3.16	.01	.93
Social self-concept	57.63 (13.07)	58.19 (13.78)	.11	.01	.68
Emotional self-concept	10.54 (2.84)	8.83 (2.64)	11.01**	.04	.78
Family self-concept	12.62 (3.04)	11.07 (2.98)	.67	.01	.71
Physical self-concept	8.65 (3.06)	6.86 (2.86)	.01	.08	.84
Intention to be physically active	10.06 (3.58)	8.74 (3.14)	1.30	.01	.81

Note: **$p < .005$ (after Bonferroni correction).

Cluster group differences on demographic variables

Results of chi square tests did not show significant differences in gender pertinence in clusters, $\chi^2(2) = 1.64$ $p > .05$, and physical activity practitioners, $\chi^2(2) = 2.82$, $p > .05$. Nevertheless, the use of different social networks reported significant differences, $\chi^2(5) = 41.50$, $p < .05$. Particularly, the standardized adjusted residuals reported that most of the students use three social networks (*n*= 87, 31.52%, Adjusted standardized residuals= ± 5) and pertained to profile (b) *n* = 51, 18.47%, Adjusted standardized residuals= ± 5. Regarding the quantitative sociodemographic variables (hours of physical activity and age) a MANOVA was performed (Wilk's Lambda= .93, *F* (2)= 9.22, $p < .05$, $\eta^2 = .06$) showed significant differences in age in which the Extremely high social networks addiction profile reported younger people (*M*= 25.69, *SD*= 6.93) in comparison with the high social networks addiction profile (*M*= 30.10, *SD*= 9.15).

Discussion

The study aimed to identify social network profiles and whether there is a relationship with basic psychological needs, self-concept and intention to be physically active. Subsequently, the hypothesis established in this work were: high social networks consumers will be related to higher scores in psychological needs and social self-concept (Alfasi, 2019; Cajas-Tibanta, 2019; Hernández et al*.,* 2017; Montes et al*.,* 2019; Siguencia & Verónica, 2017). Furthermore, low social networks consumers will report lower scores in psychological needs, social self-concept and higher scores in physical self-concept (Alfasi, 2019; Cajas-Tibanta, 2019; Hernández et al*.,* 2017; Montes et al*.,* 2019; Siguencia & Verónica, 2017). Results revealed the existence of two distinct profiles: (a) a high social network addiction profile characterized for high scores in addiction symptoms, social usage, geek treats and nomophobia; (b) an extremely high social networks addiction profile characterized for extremely high scores in addiction symptoms, social usage, geek treats and nomophobia. In contrast to previous research that examined social network addictions following a bivariate approach, this work examined social network addictions from a person-centred approach in which a subgroup of students was examined. Particularly, the combination of profiles revealed that both have high levels to Extreme levels of social network addiction which means that both profiles could be at risk to develop the maladaptive outcomes provoked by the excessive consumption of social networks (Ho et al., 2017). The absence of a low social network profile reveals that the addiction to social networks by society is increasing, and it deserves to take consideration by practitioners and governments (Hruska & Maresova, 2020; Peris et al*.,* 2018). Thus, the agglomeration of the behaviours of the sample in only two profiles with high-extreme scores in social networks addiction, alerts of the possible risk of having more extreme profiles in the future. As such, it is needed to display intervention programmes to educate towards the usage of social networks. Nevertheless, the Extremely high social networks profile has the biggest scores on all social networks addiction variables, which means that this profile could be at extreme risk (Fernández-Villa et al., 2015; Hernández et al., 2017). Furthermore, this may have negative effects on well-being as well as provoking uncontrolled behaviours, situations of isolation, continuous search for stimulation through social networks and a strong desire to be connected (Billieux et al*.,* 2015; Bolaños, 2015; Muench et al*.,* 2015; Müller et al*.,* 2017; Ryan et al*.,* 2014).

The second target of the study, that was to examine whether there is a relationship between profiles and basic psychological needs, self-concept and intention to be physically active. Results showed significant differences between the cluster on autonomy, competence and emotional self-concept. Particularly, the extremely high social networks addictions profile reported lower scores on all previously mentioned variables, which partially contradict the results previously obtained by Cajas-Tibanta (2019). The previous work from Cajas-Tibanta (2019) revealed the link between the consumption of social networks and basic psychological needs, but this work indicated that the students that reported higher

scores in social relationship need revealed an excessively high consume of social networks. Besides, those students that reached high scores on autonomy reported an obsession for social networks. Furthermore, those that reached high scores in competence revealed scores to be out of personal control in social networks consume. Likewise, previous research reported the relationship between self-concept and the consumption of new technologies (Alfasi, 2019; Hernández et al., 2017). Although they indicated that whatever means of socialization enhances self-concept (Montes et al., 2019). In addition, these authors added that the higher relationships were reported by women in emotional self-concept and the social self-concept in men. Besides, the lower scores were reported by the social self-concept in both cases. Therefore, following a person-centred approach and contradicting previous research, the extremely high social networks addictions profiles revealed lower scores on autonomy, competence and emotional self-concept. Nevertheless, the differences could be due to the utilization of a diverse number of measuring instruments, the differences in sample age and the lack of an online version of the basic psychological needs scale. Therefore, the previously established hypothesis was refuted because it was expected that: low social networks consumers will report lower scores in psychological needs, social self-concept and higher scores in physical self-concept.

On the other hand, the present study may show the inverse relationship between the consumption of social networks and the intention to be physically active. Nevertheless, there were not showed significant differences between profiles, but the Extremely high social networks profile revealed a lower intention to be physically active. Previous research by Hernández et al. (2017) indicated that the dependence that causes social networks provoke that adolescents reduce their outdoor physical activity, reductions in sleep time, and increasingly sedentary. This stems from the time that they pass by connected on the internet which might be so high, during midnight and with the negatives outcomes that are implied (Bolaños, 2015; Cash et al., 2012). Nevertheless, the population of the present study were young adults and the previous studies were from adolescents, but there is previous research that reveals a change in personality as a consequence of social networks (Grossman, 2016; Pempek et al., 2009). Thus, there were no differences between adults profiles in intention to be physically active but extremely high social networks profile revealed lower levels.

Furthermore, the covariation analysis reported significant differences in the consumption of different social networks. Particularly, most of the students use three social networks and pertained to profile two. This is related to the results of Sponcil and Gitimu (2013), which indicate that all students make use of social networks. Otherwise, it is far away from previous studies that indicate that 72% of young adults have a profile on social networks, and 57% have several profiles (Lenhart et al., 2010).

Besides, there were significant differences in age in which the Extremely high social networks profile reported younger people in comparison with the high social network profile, confirming the findings found by Quan-Haase and Young (2010),

which indicate that the youngest students access more often than the older ones. This may be since the different generations have modified their patterns of behaviour by the utilization of social networks. As such, the younger generations have been more exposed to the technologies which clearly may modify their behaviour. Therefore, the younger people of the study revealed higher negative symptoms in the usage of social networks.

As limitations, the use of self-reported measures might increase some biases (such as acquiescence, social desirability, etc.) but to prevent these biases in the sample taking the participants were claimed to respond honestly to all questions. Besides, the focus of the work on university students may hinder the generalizability of the results to other populations. Nevertheless, the target people of the study were university students and these outcomes should be understood as an approach to this population. Furthermore, the process to complete the survey may produce some limitations, because as the survey was online it could enhance the participation of those profiles that only use the internet. However, some studies prove that most students are online for a long time every day (Cajas-Tibanta, 2019; Fernández-Villa et al*.,* 2015; Hernández et al*.,* 2017; Hernández et al*.,* 2017). Subsequently, most of the students use the internet and the participants may be representative of society. Finally, another limitation might be the comprehension of the construct "addiction to the internet" (Peris et al., 2018) which may be discussed as this framework was not considered as an addiction by DSM-5 (American Psychiatric Association, 2013) among others (Carbonell & Panova, 2016; Ryan et al*.,* 2014). Thus, the approach itself could be a limitation for some scholars, however, others understand the framework as addiction and support the idea followed in this work (Masur et al*.,* 2014; Moreau et al*.,* 2015; Peris et al*.,* 2018; Wang et al*.,* 2015; Wegmann et al*.,* 2015; Wolniczak et al*.,* 2013). Therefore, there are contradictions in the comprehension of social networks addiction which makes to take cautiously the approach followed in the study.

Moreover, these outcomes will help teachers, psychologists and pedagogists to create interventions to educate students on the threats from social networks. Despite this, the current society implies the necessity to have social networks that increase of time-consuming on them and it can turn into bad consequences to student's mental health. Therefore, actions should be taken to reduce the high social network addictions in students. Moreover, schoolteachers and secondary teachers should consider educational sessions to train students about the harmful effects of social networks. Thus, the educational programmes in early education may help to prevent the negative outcomes of the social networks in university students. Nevertheless, it is also needed to carry out programmes in universities to work with students, but as a continuation of the previous programmes from school and secondary. Therefore, actions should be taken as soon as possible to prevent those negative symptoms provoke by social networks.

As conclusions, two diverse profiles emerged from the sample in which both revealed high scores on social network addictions. Particularly, both could be at risk to engender the maladaptive outcomes that provoke social networks, such as a

compulsive desire to be connected, anxiety, nomophobia, or isolation. Furthermore, the decrease in the basic psychological needs of the high social network profile may deserve to be handled carefully. Mostly, because it seems that the amount of addiction could develop negative consequences to mental health, such as lack of personal control, even neglecting the people of their close environment. Besides, the Extremely high social networks addiction profile reported lower scores in the intention to be physically active which means that the increase of addiction may decrease the intention to exercise which can enhance the appearance of health issues. As such, according to the hypothesis that previously established, we might say that were not accomplished due to the high social networks profile reported better outcomes in psychological needs, self-concept and intention to be physically active rather than the extremely high addiction profile. This means, that the results obtained in the present study contradicted the previous ones that followed a bivariate approach. Therefore, more studies grounded in a person-centred approach should be grounded to ensure if future studies follow this pattern.

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