Privacy in social networks: analysis of the Spanish teenagers' digital self-representation risks

Privacidad en redes sociales: análisis de los riesgos de auto-representación digital de adolescentes españoles

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ABSTRACT
Introduction: Digital competencies are a reference for the training of adolescents in the face of new digitalization processes, especially in the use of social networks where they consume and produce personal information through different digital self-representation practices. These practices and the risks they pose to the privacy of minors are described in this paper based on a review of recent studies and data from a sample of Spanish adolescents (n=2066) aged between 12 and 18 years. **Methodology:** The methodology was quantitative, using a Likert-type scale questionnaire that complies with expert validation criteria and reliability, answered anonymously by the participants. **Results:** Among the results, similar practices stand out in three of the social networks most used by adolescents (WhatsApp, Instagram, and Spotify), associated with the use of personal photos, real

name, and location, as well as the non-filtering of audiences, being adolescents aware that sharing personal information poses risks to their privacy and having received training in this regard. **Discussion and Conclusion:** Finally, it is concluded that training in protective behaviors should be reinforced into basic digital skills so that adolescents learn to interact safely on social networks, with responsibility and taking care of their privacy and digital self-representation.

KEYWORDS: digital competence; adolescents; digital self-representation; social networks; internet risks; responsible use of social networks; digital skills.

RESUMEN
Introducción: Las competencias digitales son referentes para la formación de los adolescentes ante los nuevos procesos de digitalización, en especial sobre el uso de redes sociales donde consumen y producen información personal a través de diferentes prácticas de auto-representación digital. Estas prácticas y los riesgos que suponen para la privacidad de los menores son descritas en este trabajo a partir de la revisión de estudios recientes en torno al tema y de los datos de una muestra de adolescentes españoles (n=2066) de entre 12 y 18 años. **Metodología:** La metodología ha sido cuantitativa empleando un cuestionario con escalas tipo Likert, que cumple con criterios de validación de expertos y la fiabilidad, respondido de forma anónima por los menores. **Resultados:** Entre los resultados destacan prácticas similares en tres de las redes sociales más usadas por los adolescentes (WhatsApp, Instagram y Spotify), asociadas al uso de fotos, nombre y ubicación real, así como al no filtrado de audiencias, siendo conscientes los menores de que compartir información personal supone riesgos para su privacidad y habiendo recibido formación al respecto. **Discusión y Conclusiones:** Finalmente, se concluye que la formación en conductas protectoras debe reforzarse dentro de las competencias digitales básicas, para que los menores aprendan a interaccionar de forma segura en las redes sociales, con responsabilidad y cuidando su privacidad y auto-representación digital.

PALABRAS CLAVE: competencia digital; adolescentes; auto-representación digital; redes sociales; riesgos de Internet; uso responsable de redes sociales; habilidades digitales.

CONTENT

Translation by **Paula González** (Universidad Católica Andrés Bello, Venezuela)

1. Introduction

1.1. Digital skills and online privacy

Digital skills, understood as the set of capacities and abilities that allow people to be responsible and critical to the media, to be able to search, process, communicate, create, and disseminate information through technologies (Ferrés and Piscitelli, 2012; Pérez-Rodríguez and Delgado-Ponce, 2012), have become fundamental skills in the formation of citizens (Atchoarena et al., 2017; González et al., 2018) and essential for lifelong learning (Casillas-Martín et al., 2020), because they allow people to adapt to the current media ecosystem, being responsible and reflective in the use of ICT (Tejada and Pozos, 2018).

Digital skills are key for the development and inclusion of all groups, although they are a benchmark for the training of minors and young people, for whom the digitization processes are offering greater possibilities of access to any digital content, both public and private (Quintas-Froufe and González-Neira, 2021). Minors and young people become the undisputed protagonists of digital communication channels (García, et al., 2013; Núñez and Ruta, 2019; Seo et al., 2014) where, more and more early, they share, design, or generate content and information about their daily life. However, neither the ease nor the rapid handling of the technologies guarantees that they are competent or that they may be able to avoid digital risks (Aguaded et al., 2007). And here is the context of this research, noting that when minors publish, consume, or interact with digital information, they continuously expose their identity (Livingstone et al., 2010), showing on social networks information that defines them and confronts them with risks to their privacy (Peñalva et al., 2018), both those associated with the use of social networks, of which they are sometimes not aware (De la Villa Moral and Fernández, 2019), and others that may be associated with the consumption of information from unreliable pages (Siddiqui and Sigh, 2016), inappropriate use of language, or addictions and excessive use of technologies (Cabero et al., 2020; Pontes et al., 2015).

Given the risks that threaten the privacy of minors, different international organizations urge and promote digital skills among minors, such as the 2030 Agenda (2020) or the UNICEF Childhood and Adolescence Manifesto (2020). Specifically, the European Commission published the European Framework for Citizens' Digital Competence (Ferrari, 2013), and another similar framework for the educational context DIGCompEdu (Redecker, 2017) in which it is described how to empower and train minors and young people with the necessary capacities to interact or share content in the digital sphere, adequately manage their digital identity, or promote appropriate behaviors on social networks, among some of the most relevant skills. These frameworks are a guide at the national or local level of different educational programs and actions that are becoming more frequent in school and extracurricular settings for the prevention and protection against digital risks (McDougall et al., 2018).

Considered as a key digital skill for minors and young people, the protection of privacy in digital environments should be a training priority from different educational instances so that it can become not only a skill but also a value to be promoted. Being aware of its importance requires jointly analyzing which are the most frequent digital self-representation practices of minors and how these practices expose them to risks to their privacy. Along these lines, in this paper, we will present a literature review based on recent studies and present the results of national research, in the Spanish context, on the risks associated with the digital self-representation practices of adolescents in social networks.

1.2. Digital self-representation and risks for the privacy of minors

Digitality has had important implications for the development of identity and privacy management, with an even more evident impact for minors, who are part of a culture that urges them to be and participate online, both to redefine themselves and to socialize. The use of social networks has increased in the last year (Kemp, 2021), especially among minors, with the greater use of *Instagram* standing out (Statista, 2021). The use of these social networks has become widespread at an intergenerational and cross-cultural level, with the publication of increasingly visual self-representation content beginning to be normalized (Gioia et al., 2021), increasing the risks of privacy and surveillance (Adorjan and Ricciardelli, 2020) and, with them, the new areas of interest for media and digital literacy.

Among the different dimensions of privacy affected by digitality (Stuart et al., 2019), we are witnessing a moment of redefinition of the so-called “expressive privacy” (DeCew, 1997), related to the expression of oneself and of one's identity, which was traditionally associated with practices and values of protection of intimate aspects, but which is currently being reinterpreted and publicly exploited (Richardson, 2017). In reference to the first digital spaces - more textual networks and not as visual or interactive as those offered today - Baym and Boyd (2012) had already been warning a dilution between the boundaries of public and private, control and freedom, or the virtual and the real, to explain that users were beginning to manage their "private self" on the frontiers of the public, considering the impact that their practices would have on the audiences they wanted to address. Today we have networks and platforms that allow greater possibilities of expression and representation, with more sophisticated mechanisms to define what published content can be seen by different networks of private contacts and which ones prefer to be extended to the public sphere. The phenomenon that we could call “privacy control confusion” is interesting, by which audiences are empowered by the possibility of being able to select what they want to publish for different audiences, causing a false sense of protection or anonymity. In the case of adolescents, studies confirm that they are more concerned with limiting access to their personal content to authority figures, such as parents and teachers (Torrecillas et al., 2020) than with protecting themselves against unwanted advertising (Jeong and Coyle, 2014) or the consequences of the violation of their personal information, both for them and their relatives, both thinking about their present and future (Reid and Boyer, 2013).

Along the same lines, we could consider with Rodríguez et al. (2017) the idea of "increased privacy", as a result of social recognition and emotional growth that are multiplied by online dissemination, thus increasing the desire to continue publishing personal information. It must be taken into account that sharing personal information is a differential aspect, sometimes decisive, in the possibilities of socialization (Crescenzi et al., 2013) and that, at a psychological level, it has been sufficiently explained that self-disclosure is part of the social process that allows, or is used, to form and maintain relationships of closeness or trust (Reisenzein et al., 2012); in other words, disclosing information that defines us also brings us closer or makes us feel close to others (Davis, 2013). And all this places the user of social networks before the decision to choose to protect their privacy or promote their sociability and recognition, preferring on many occasions the social benefits of publishing their private information.

This is undoubtedly one of the most pressing challenges that we are currently facing, aimed at making visible the need for citizens to know the risks posed by some of their digital self-representation practices and learn to protect their personal information in social networks. If possible, it is an even more urgent need for minors who, due to their needs and evolutionary development, end up sacrificing their protection, to put first the popularity and social prestige offered by social networks and digital interactions. Among the multiple benefits that adolescents find in social networks for their self-representation, we could place at least two explanatory variables of the increasing risks, which also promote an intensive and unsafe use: on the one hand, the expansion of opportunities, that is, the fact that digital platforms and services that offer self-representation and online interaction with other users have expanded the possibilities and forms of offline communication, these new forms being mostly used, renegotiated, and reinvented by young people (Rodríguez et al., 2017; Wood et al., 2016). In this way, self-acceptance depends on the multiple forms of expression and representation and how feedback is received or how what is published online is socially validated, as confirmed by different recent studies (Aldrin, 2019; Barth and De Jong, 2017; Bell, 2019; Cipolletta et al., 2020; Spiller, 2020). And on the other hand, to greater control what is called "impression management", that is, to be able to control the online impression that you want to cause in a target or desired audience (Bell, 2019), not only because you can define

the recipients of what is published (Scott and Fullwood, 2020), but because there is a greater possibility of congruence by being able to continue a digital history of self-representation, so that it is not dissonant with the identity already shown by the individual (Leong, 2016), to all this are added the advantages of asynchrony and the test before publication (Ditchfield, 2020; Gioia et al., 2021) that allow the improvement and modification of what is desired to be published to be represented, in front of the instantaneity of the offline world.

Taking stock of these possibilities, the risks of these digital practices are placed, paying attention to those that have been specially studied for the group of minors and adolescents. Among the risks, Aldrin (2019) has documented the importance of the username chosen for self-representation, which is public, where minors may be revealing their personal interests, their age, gender, sexuality, physical appearance, ethnicity, or cultural and religious orientations. Doster (2013) has exposed how the photos published by adolescents not only reveal physical appearance or behaviors but possessions and objects also offer information on social status, as other studies have confirmed (Hong et al., 2020). Likewise, videos and "challenge" phenomena promote the social comparison of skills (Yang et al., 2018) generating an unreal or exaggerated digital identity. Crescenzi et al., (2013) have stated that quite regularly and without hiding themselves, adolescents make their location public in real-time, either by geolocation, or indirectly through messages or photos of places, which entails other risks that can be extended to the offline world, or are exposed to other cyber-risks such as grooming, sextortion, or cyberbullying (Montiel et al., 2016); Schwartz and Halegoua (2015) have also studied how shared location generates associations of users to places, which can lead to erroneous conclusions or conclusions not related to the subject, their preferences, and what defines those places. Bell (2019) has also highlighted the ambiguity of the ephemeral characteristic that defines some digital spaces, which are interpreted this way, when in reality most of the information published online does not disappear and remains accessible over time, making self-representation possibly contradictory in the long term, or interfering with identity and roles that are achieved in the future. Furthermore, the fact that online services and different networks are linked to each other makes it increasingly difficult to separate the personal information that is published in different spaces, accessing different types of self-representation information (Emanuel and Stanton, 2014), which is no longer dispersed, nor limited, although the user had preselected it for different audiences.

These risks are not unknown to the user, that is, studies on the subject show that among the group of minors and young people there is concern about the risks of online privacy, either because they have received precise training or because they have suffered its consequences (Ahn et al., 2012; Aldrin, 2019; Emanuel and Stanton, 2015; Gardner and Davis, 2013; Herring and Kapidzic, 2015; Livingstone, 2015; Reid and Boyer, 2013; Richardson, 2017). The problem lies in what Barth and De Jong (2017) have called the "privacy paradox", which presupposes that even knowing the risks, they choose to participate rather than protect themselves. The digital culture itself, as we have exposed, may be promoting self-representation practices that are not safe, which generates tensions in minors about what is considered appropriate or not to publish (Mascheroni et al., 2015) because, in the absence of training, minors are building their own publication rules, sometimes impulsive, reactionary, or from a routine (Spiller, 2020). To this must be added the needs of their life moment, which promote these practices of self-disclosure and exhibition because in adolescence their behaviors are usually directed by the desire for attention or the avoidance of exclusion from their group (Eek -Karlsson, 2021). Given the present risks, regardless of whether it is due to culture or maturational development, continuing training in digital skills continues to be unavoidable for the protection of the privacy of minors.

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2. Objectives

Based on the above, the main objective of this study has been to analyze the privacy risks that adolescents face when they perform different practices of digital self-representation (sharing photo, name, or location, filtering audiences, showing consistency) on the social networks they use the most. Specifically, in this study the specific objectives of the analysis are (1) to check whether or not there are differences by gender or age regarding the frequency with which adolescents carry out these risky practices when sharing information on the social networks they intensively use (WhatsApp, Instagram, and Spotify, according to the adolescents in the sample); (2) whether or not they perceive the existence of risks when sharing personal information; and, in a complementary way, (3) if having training in digital skills on online privacy protection has any impact on risks, specifically studying if risky practices are more evident for those who state that they did not receive training in this ambit.

3. Methodology

The study and the data presented are part of a research that has used a quantitative methodology, through an operationalized questionnaire in consensus among the project researchers (CONECT-ID). Each dimension was generated from concepts and variables, using Likert-type scales and dichotomous questions, considering the results of a previous qualitative analysis of the same project (Muñoz-Rodríguez et al, 2020).

To identify issues and questions liable to error, before the coding of the instrument, a pilot test was carried out with 15 adolescents through an incidental sample, with the consent of their legal guardians, which modified the wording of some items. Likewise, it was validated by eight researchers from the areas of: sociology, psychology, and research methods in education. Finally, the questionnaire was reduced to 19 items and five blocks: sociodemographic data (section a, 6 items, with dichotomous questions), school trajectory (section b, 4 items, with scales of 3 and 4 elements), scenarios and connection uses (section c, 4 items, with scales of 3 and 4 items), digital identity (section d, 2 items, with dichotomous questions), and consequences and results (section e, 3 items, with scales of 3 and 4 items). To measure the internal consistency of the instrument, the Cronbach's Alpha statistic was applied, which indicated that the reliability offered guarantees, with a value of 0.713. For this study, items have been selected from the blocks: demographic aspects (age and gender), scenarios and connection uses (use of social networks and platforms), digital identity (an item with five online self-representation activities), and consequences of the use of social networks (two items: “sharing personal information on networks involves risk”, and “they have trained me to know what information to share on the internet and which not”).

The final questionnaire was applied between November and December 2020, using an online survey guaranteeing the anonymity of the participants and with the consent of their legal guardians, based on a stratified sampling and by conglomerates from different Spanish communities, in secondary schools (the teachers in charge of each participating educational center shared the instructions and the questionnaire by email to the students in their group). Once filtered, 2,066 valid units were obtained from 15 Autonomous Communities and 31 provinces. The final sample presents an acceptable balance in terms of sociodemographic variables such as gender, age, area of residence, and social class. The 2,066 adolescents are between the first and fourth year (1st 14.4%, 2nd 12.7%; 3rd 13.75%, 4th 17.2%) of Compulsory Secondary Education (ESO by its acronym in Spanish), first (19.6%) and second (18.4%) of High School, and basic (0.9%) and intermediate level (3.1%) Vocational Training (FP by its acronym in Spanish). Table 1 shows the distribution of the sample regarding gender, with 42.8% men and 57.2% women, and ages 12 to 18 years old. To operationalize

the analyzes, age was subsequently grouped into three ranges (12-14, 15-16, and 17-18 years old, respectively).

Table 1. *Distribution of the sample by age and gender*

Gender					Total	
Age (years)	Men	%	Women	%	N	%
12	143	49.1	148	50.9	291	14
13	104	43.3	136	56.7	240	11.6
14	133	47.8	145	52.2	278	13.45
15	144	42.7	193	57.3	337	16.30
16	183	40	276	60	459	22.21
17	152	39	238	61	390	18.87
18	25	35.2	46	64.8	71	3.43
Total	884	42.8	1182	57.2	2066	100
Note. Sample size 2066.						

Source: Self-made

The procedure for selecting the social networks that adolescents intensively use was as follows: in section b) of scenarios and connection uses, for each social network, participants were asked to specify whether they made "intensive use" (continued use frequency and to post videos, photos, or comments), "limited use" (less frequent and to review information from others), or "no-use"; The data showed, as can be seen in Chart 1, that the adolescents were intensive users of three main social networks: *WhatsApp* (59.8%), *Instagram* (54.4%), and *Spotify* (or similar music platforms) (54 %), being the use of other networks more limited. To ensure representativeness, a differential analysis by gender was performed and the Chi-Square (X^2) statistical value determined that there were no significant differences between gender and intensive use, limited use, or no-use of *WhatsApp* (p= 0.713), *Instagram* (p= 0.901), and *Spotify* (p= 0165).

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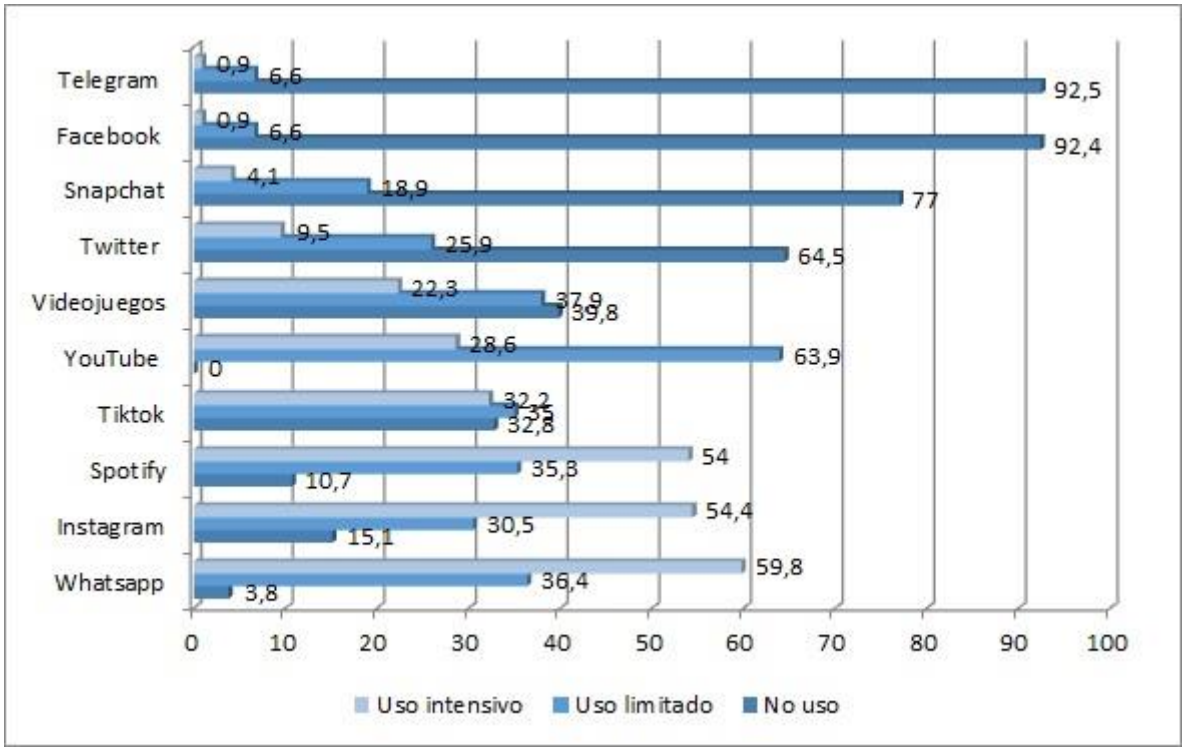

Chart 1: *Representation of the use of different social networks by the sample*
Source: Self-made

Extracting adolescents who make more intensive use of the three social networks, both in terms of time and diversity of practices, sub-samples of n= 1236 for WhatsApp, n= 1124 for Instagram, and n= 1116 for Spotify were used for this study, over the original sample of 2,066 subjects. Separate analyzes were carried out on the three social networks since each one can allow different self-representation practices, such as: photo sharing, location, etc.

Table 2 presents the description of the three subsamples, by age and gender, according to the first objective of analysis that seeks to find differential results, having guaranteed good proportionality for these variables regarding the global sample.

Table 2. *Intensive use of social networks and distribution by gender and age.*

	Age (years)			Gender		
Social network	12-14	15 - 16	17 - 18	Man	Woman	Total %
WhatsApp	39,6% (n=490)	38,2% (n=472)	22,2% (n=274)	43,4% (n=536)	56,6% (n=700)	100 (**n=1236**)
Instagram	39,1% (n=439)	38,9% (n=437)	22,1% (n=248)	42,3% (n=476)	57,7% (n=648)	100 (**n=1124**)
Spotify	38,1% (n=426)	39,3% (n=439)	22,5% (n=251)	41,7% (n=463)	58,5% (n=653)	100 (**n=1116**)
Total over N 2066	39,2% (n=809)	38,5% (n=796)	22,3% (n=461)	42,8% (n=884)	57,2% (n=1182)	

Source: Self-made

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For the second objective of the analysis, the perception of risk by adolescents has been taken into account (item "sharing personal information in networks involves risk"), analyzing in a differentiated way if their perception varies depending on the three social networks they intensively use, as well as the existence of differences in this perception according to age and gender.

The procedure for the analysis of the complementary objective on the effect of the training has also been by selecting a subsample from the item that refers to the digital skill associated with having received training on privacy ("I have been trained to know what information to share on the internet and which not"). The item, a Likert-type format, found that 56.3% totally agreed, 25.8% strongly agreed, 9.8% disagreed, and 8.1% strongly disagreed; The profile of these last subjects, who had not received training, corresponding to n= 168, was analyzed concerning the exposure of self-representation risks, comparatively regarding the rest of the subjects.

In the data analysis, descriptive (frequencies) and contrast studies were carried out to identify differences (*Chi and Cramer's V*) by gender, age, risk perception, and training received. The analyzes were carried out using the SPSS statistical program in version 25, establishing a level of significance of $p \leqslant 0.05$.

4. Results

For the first objective, differentiated analyzes were carried out in the three social networks intensively used by the adolescents in the sample: *WhatsApp*, *Instagram*, and *Spotify*. In the first place, the analysis of the frequency of risk of self-representation practices of those who intensively use WhatsApp (see Table 3) showed high percentages in all age ranges regarding the use of real photos when communicating through this network, although the range with the highest percentage (41.8%) was the youngest (⩽14 years), being 81.4% concerning the total age of the range. We highlight that 41.2% of students between 12 and 14 years old indicated that they prefer not to use a name and a photograph with which they are not recognized (82.2% of n = 490 of the range), preferring then to show their real photo. Furthermore, when it comes to sharing their personal information, such as location, photographs, and hobbies, 40.8% (50.6% n= 490) of adolescents in the same range indicated they do, while 39.3% of the range 15-16 years old prefers not to share it (52.3%, n= 472). Regarding the filtering of the audiences that could view personal data, high values are distinguished in the non-preference of this practice of self-representation in all age ranges, being able to indicate that the visible information is in the public domain and not restricted to certain contacts. Finally, it was observed that all adolescents seek some congruence in self-representation on and offline since they consider that they behave the same in the network as in person, with the 12–14-year-old range standing out with 40.3%.

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Table 3. *Online self-representation practices in WhatsApp based on the age range*

		WhatsApp					
		Yes			No		
Self-representation practices		fi	%	% age range	fi	%	% age range
1. I use my real photo on my social networks	12-14	**399**	**41.8**	**81,4**	91	32.3	18,6
	15-16	356	37.3	75,4	116	41.1	24,6
	17-18	199	20.9	72,6	75	26.6	27,4
	total	954	100		282	100	
2. I prefer to use a name and a photograph with which I am not recognized	12-14	87	33.7	17,8	**403**	**41.2**	**82,2**
	15-16	109	42.2	23,1	363	37.1	76,9
	17-18	62	24	22,6	212	21.7	77,4
	total	258	100		978	100	
3. I share my personal information on my networks (photographs, location, hobbies)	12-14	**248**	**40.8**	**50,6**	242	38.5	49,4
	15-16	225	37	47,7	**247**	**39.3**	**52,3**
	17-18	135	22.2	49,3	139	22.1	50,7
	total	608	100		628	100	
4. I filter my contacts so they can see my personal information	12-14	159	40.4	32,4	**331**	**39.3**	67,6
	15-16	151	38,3	32,0	**321**	**38.1**	68,0
	17-18	84	21.3	30,7	**190**	**22.6**	69,3
	total	394	100		842	100	
5. I behave the same online as in person	12-14	**387**	**40.3**	**79,0**	103	37.3	21,0
	15-16	**367**	**38.2**	77,8	105	38	22,2
	17-18	**206**	**21.5**	75,2	68	24.6	24,8
	total	960	100		276	100	
Note. Total N. intensive use 1236 / Total N. 12-14 = 490 / Total N. 15-16 = 472 / Total N. 17-18 = 274 / fi = Absolute frequency							

Source: Self-made.

Regarding the Instagram social network (see Table 4), the majority of adolescents indicated that they use their real photos when they communicate, with the age range 12-14 years old standing out with 40.4%, while, on the contrary, 42.4% of adolescents in the age range 15-16 years old do not use them. It is appreciated that all ages prefer to use their names and personal photographs to be recognized, being a more frequent practice in adolescents aged 12-14 years old (79.7%, n = 439). Confirming the above, adolescents in the group 12-14 years old (40.2%) and 17-18 years old (23.1%), do share other personal data such as location; On the other hand, 15–16-year-old students mention that they do not. Regarding other self-representation practices, risk actions such as not filtering contacts so that they can view personal data in all age ranges continue to be observed, with percentages close to 70%, with students between 15 and 16 years old being the more representative with 39.1% (69.6%, n = 437). Finally, it is observed that adolescents who make intensive use of this social network also behave the same as in person, which would indicate their concern about congruence, although the percentages would be lower than those found for the WhatsApp social network.

Table 4. *Online self-representation practices on Instagram based on the age range*

		Instagram					
		Yes			No		
Self-representation practices		fi	%	% age range	fi	%	% age range
1. I use my real photo on my social networks	12-14	345	**40.4**	78,6	94	34.9	21,4
	15-16	323	37.8	73,9	**114**	**42.4**	26,1
	17-18	187	21.9	75,4	61	22.7	24,6
	total	855	100		269	100	
2. I prefer to use a name and a photograph with which I am not recognized	12-14	89	35.7	20,3	**350**	**40**	**79,7**
	15-16	107	43	24,5	**330**	**37.7**	75,5
	17-18	53	21.3	21,4	**195**	**22.3**	78,6
	total	249	100		875	100	
3. I share my personal information on my networks (photographs, location, hobbies)	12-14	**214**	**40.2**	48,7	**225**	**38**	51,3
	15-16	195	36.7	44,6	**242**	**40.9**	55,4
	17-18	123	23.1	49,6	125	21.1	50,4
	total	532	100		592	100	
4. I filter my contacts so they can see my personal information	12-14	138	39.9	31,4	**301**	**38.7**	**68,6**
	15-16	133	38.4	30,4	**304**	**39.1**	**69,6**
	17-18	75	21.7	30,2	**173**	**22.2**	**69,8**
	total	346	100		778	100	
5. I behave the same online as in person	12-14	**339**	**39.4**	77,2	100	38	22,8
	15-16	**330**	**38.3**	75,5	107	4.7	24,5
	17-18	**192**	**22.3**	77,4	56	21.3	22,6
	total	861	100		263	100	
Note. Total N. intensive use 1124 / Total N. 12-14 = 439 / Total N. 15-16 = 437 / Total N. 17-18 = 248 / fi = Absolute frequency							

Source: Self-made.

In the case of the multiplatform *Spotify* -which is considered by adolescents as a social network since, besides offering access to songs and musical content, it is used to share lists of songs through a public profile that can be fed back through ratings- Table 5 presents high values in the youngest (12-14 years old) in practices one and two of use of real photos and use of the recognized name. Slight differences between age ranges, regarding sharing personal information also stands out; 39.2% (50.2%, n = 246) of students between 12-14 years old are the ones who most perform this action, compared to the group of 17-18 years (23.5%) who do not practice it. Regarding contact filters and congruent behavior, the trend is maintained compared to other social networks, obtaining that the minors do not filter their audiences (being more frequent in the 12–14-year-old range with 38.3%) and behave similarly in real life.

Table 5. *Online self-representation practices on Spotify based on the age range*

		Spotify					
		Yes			No		
Self-representation practices		fi	%	% age range	fi	%	% age range
1. I use my real photo on my social networks	12-14	**343**	**40.2**	80,5	83	31.6	19,5
	15-16	325	38.1	74,0	**114**	**43.3**	26,0
	17-18	185	21.7	73,7	66	25.1	26,3
	total	853	100		263	100	
2. I prefer to use a name and a photograph with which I am not recognized	12-14	81	34.2	19,0	**345**	**39.2**	**81,0**
	15-16	102	43	23,2	**337**	**38.3**	**76,8**
	17-18	54	22.8	21,5	**197**	**22.4**	**78,5**
	total	237	100		879	100	
3. I share my personal information on my networks (photographs, location, hobbies)	12-14	**214**	**39.2**	50,2	212	37.2	49,8
	15-16	**215**	**39.4**	49,0	224	39.3	51,0
	17-18	117	21.4	46,6	**134**	**23.5**	53,4
	total	546	100		570	100	
4. I filter my contacts so they can see my personal information	12-14	135	37.8	31,7	**291**	**38.3**	68,3
	15-16	152	42.6	34,6	**287**	**37.8**	65,4
	17-18	70	19.6	27,9	**181**	**23.8**	72,1
	total	357	100		759	100	
5. I behave the same online as in person	12-14	**330**	**38.8**	**77,5**	96	36.2	22,5
	15-16	**328**	**38.5**	74,7	111	41.9	25,3
	17-18	**193**	**22.7**	76,9	58	21.9	23,1
	total	851	100		265	100	
Note. Spotify network. Total N. intensive use 1116 / Total N. 12-14 = 246. / Total N. 15-16 = 439 / Total N. 17-18 = 251 / fi = Absolute frequency							

Source: Self-made.

Regarding gender, no statistically significant differences were found, understanding that both men and women carry out similar self-representation practices in the different social networks. As can be seen in chart 2, adolescent girls and boys perform similar percentages of practices that place them before different privacy risks, the most frequent being sharing their photos (76.1% women and 77.8% men) and their real name (79.5% women and 78.2% men).

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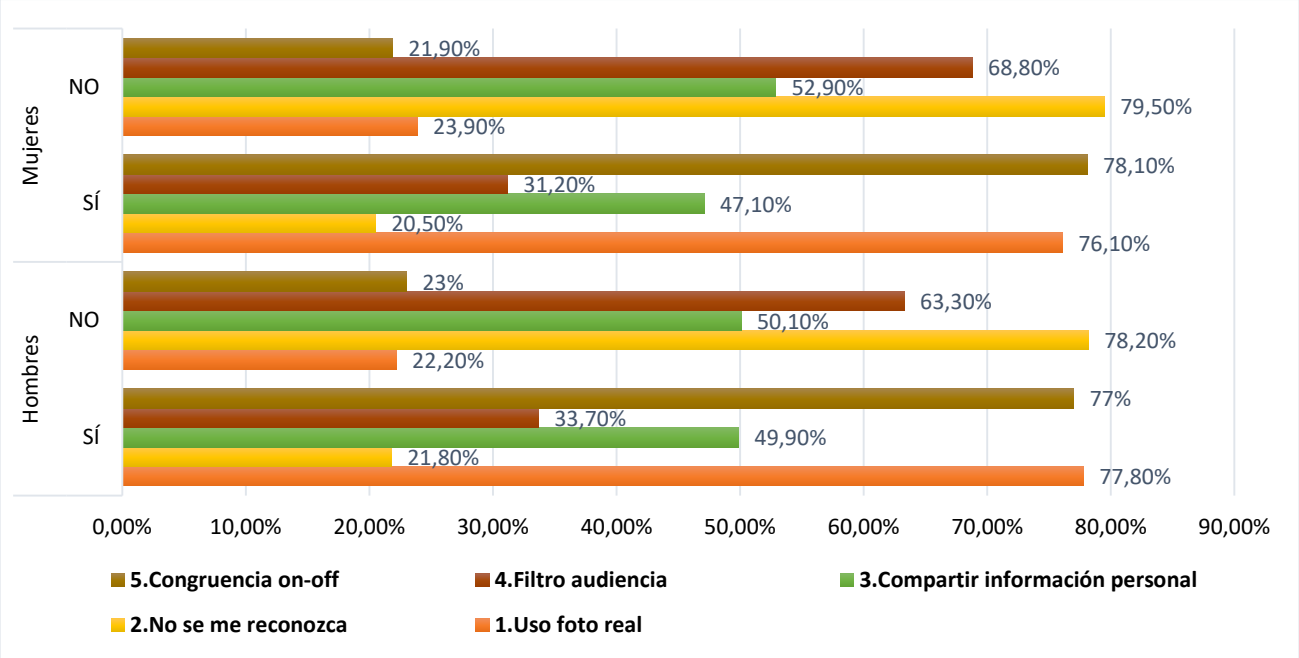

Chart 2: *Online self-representation practices by gender*
Source: Self-made

Regarding the second objective of analysis on the perception of risk that adolescents have regarding privacy ("sharing my personal information with my friends through the internet involves risk"), differently in the three social networks, similar percentages were observed in the level of agreement (see Table 6). There were no statistically significant differences by age or gender. The percentages do not differ regarding the total sample, finding a consensus of around 70% of adolescents who would recognize that when sharing personal information on social networks they expose themselves to risks, with the percentage of agreement in the answers found for male intensive Instagram users being higher. However, the percentage of disagreement of around 30%, both in men and women, users of the three networks, is relevant data regarding the existence of adolescents who still maintain a low awareness of the risks.

Table 6. *Perception of risk when sharing personal information on social networks*

	Disagree		Agree		
	Men	Women	Men	Women	X^2
WhatsApp (n=1236)	151 (28,17%)	219 (31,28%)	385 (71,82%)	481 (68,71%)	*0,157*
Instagram (n=1124)	130 (27,31%)	**196 (30,24%)**	**346 (72,68%)**	452 (69,75%)	*0,398*
Spotify (n=1116)	139 (30,02%)	193(29,55%)	324(69,97%)	460 (70,44%)	*0,968*
Total (N=2066)	264 (29,86)	355 (30,03%)	620 (70,13%)	827 (69,96%)	*0,884*

Source: Self-made

Finally, for the analysis of the protective effect of the training received on online privacy, it was found that there were no differences between the different social networks, and in-depth analysis was carried out of the adolescents who said they had not received training (n = 168, corresponding to 8.1% of the total sample). Regarding age, 34.5% corresponded to the 12–14-year-old range, 45.8% to

the 15–16-year-old range, and 19.6% to the 17–18-year-old range. No differences were found by gender, 44.6% of men and 55.4% of women indicated that they had not received training. Regarding self-representation practices, slightly higher percentages were obtained than those presented for the different social networks: 76.8% share their photo, 78% use their real name, 41.1% share their location, 64.3% do not filter the audience, and 84.5% worry about the impression of online-offline congruence, all of which would indicate that the lack of training would place them in a more vulnerable position regarding protection of their online privacy. However, these differences were not statistically significant, so the preventive or protective effect of the training would not be confirmed.

5. Discussion/Conclusions

The results of this study show that adolescents are performing digital self-representation practices that expose them to certain risks since they are publishing personal information that may compromise their privacy, especially, among the most frequent, is the use of photos, followed by the need for congruence, as other studies have also pointed out (Aldrin, 2019; Doster, 2013; Hong et al., 2020). Regarding the latter, it is important to point out that more and more studies confirm that social networks are no longer spaces for experimentation with a different identity, but rather an online-offline continuation, discarding unreal or exaggerated behaviors for others that are more congruent (Leong, 2016). Along the same lines, high percentages of around 80% were found when preferring to use real names or photos, which would indicate that adolescents no longer pretend to hide under false identities, as confirmed by other research works (Bell, 2019; Crescenzi et al., 2013). Other representation practices are not as frequent, but whose percentages are higher among the youngest group of adolescents (12 to 14 years old), referring to the fact of sharing their location and their photos, or hobbies, which is an activity that half of them practice frequently. It must be taken into account that this percentage may be conditioned by the time of data collection, in the context of Covid-19, post-confinement, where one of the frequent practices for minors has been to share challenges on social networks (Yang et al., 2018). This result should continue to be researched at a later time and verify if it has been a trend contextualized in that time, or is it a frequent and/or growing practice among minors.

Another of the relevant issues regarding their self-representation practices, which has also been sufficiently analyzed in studies with similar groups (Baym and Boyd, 2012; Richardson, 2017; Rodríguez et al., 2017; Wood et al., 2016) is the control that offers the user of social networks the possibility of limiting the publication of personal information for different audiences, an action that has not turned out to be a common practice in the adolescents of the analyzed sample since around 70% confirmed that they do not do it. This could mean that, indeed, their practices pose risks to their privacy because their personal information is publicly accessible and not limited to their contacts. Another possible explanation, as we have commented previously, is that adolescents may be more concerned with the coherence and continuity of their own "online-offline" self without the need to hide information or generate inconsistencies. In any case, and although no statistically significant differences have been found, the percentages increase with age, that is, the older the people, the fewer contacts they filter, which could show that they start exposing their personal information less and over time, they lose this protective behavior.

Despite having carried out a differentiated analysis based on the three networks that they use most frequently, or intensively (*WhatsApp, Instagram, Spotify*), the percentages found and the absence of statistically significant differences would lead us to affirm that the technological possibilities are not the ones which expose them to privacy risks since although the networks offer different options for self-representation, they behave similarly in all of them. One possible explanation may be related to the developmental needs and expectations of adolescence, which, as other studies have shown, would

lead adolescents to behave similarly as a result of belonging to a culture of exhibition and social comparison (Mascheroni et al., 2015; Spiller, 2020; Yang et al., 2018).

Regarding age, it is important to indicate that a good part of the percentages that suppose high frequencies in practices of digital self-representation associated with risks are in the range of 12-14 years old, for the three social networks analyzed. No correlations were obtained to support that the younger they are, the more exposed to risks they would be in their practices, but the fact that they are slightly more frequent invites us to reflect on the need to develop preventive and protective training as soon as possible, even in stages of primary or elementary education.

Regarding gender, although other studies confirmed that women tend to show more protective behaviors (Herring and Kapidzic, 2015; Rodríguez et al., 2017), no statistically significant differences were found in the sample, requiring further studies that confirm or not the results of this research.

Faced with the need to develop digital skills that make adolescents more aware of online risks, our results confirm the privacy paradox exposed by Barth and De Jong (2017) since the majority of participants do state that they are aware of the existence of risks when they share their personal information, without this knowledge preventing them from taking actions that would be risky. It is likely that, due to evolutionary development, or social and cultural pressure (Eek-Karlsson, 2021), they may end up sacrificing their protection for the need to obtain social prestige or popularity; For this reason, educational actions should work on these aspects of risks, developing the need to value protection as a necessity as well. Along these lines, some existing initiatives (Gairín and Mercader, 2017) are aimed at preventing or detecting risky behaviors in the use of digital and technological content among adolescents, promoting self-protection (increased privacy measures and protection of personal data in social networks), restrictions (favoring parental control and management of the type of access pages made by minors); the use of antivirus (promote the proper use of antivirus to prevent the digital identity from being stolen through profiles); the creation of rules and regulations such as not sharing information or photographs with strangers; and the establishment of agreed hours for playful connection and the promotion of common areas at home that control the excessive or abusive use of technologies.

Training in protective behaviors, integrated into basic digital skills, would help minors to know how to interact safely on social networks, with responsibility and taking care of their privacy and digital self-representation. However, it is only a potential protective factor, and the type of training that minors receive should be analyzed and reinforced; In our study, contrary to expectations, the analysis of those adolescents who stated that they had not received training to protect themselves from online privacy risks did not confirm a differential effect that denoted the existence of higher risky practices compared to others who did declare that they had received training; similar percentages were found. This result must be refuted in new studies since there are also research works that have affirmed the opposite, stating that the development of protective behaviors in the face of "imagined surveillance" is beginning to be evident in adolescents and young people (Adorjan and Ricciardelli, 2020; Duffy and Chan, 2019), as a result of raising awareness of the risks of Bigdata, which also include those associated with the protection of individual privacy, all emerging aspects that will have clear repercussions on educational agendas in the short term.

Finally, it is important to point out that this study reinforces the need to continue developing digital skills in minors -in general and in particular on privacy-, to limit impulsive or risky practices. As has been shown, the use of social networks is on the rise, which requires new pedagogical strategies that allow adolescents to critically handle information, as well as to responsibly design and publish

shared content. For this, it is essential to teach them which digital self-representation practices would make them more vulnerable to attacks against their privacy, discarding the rules built by themselves (Spiller, 2020) for protective strategies that are integrated into the set of basic and necessary digital skills, many of which have been internationally agreed upon as key skills. In this sense, the training of students in digital skills is as important as that of the teachers in charge of training them, guaranteeing quality and efficiency in the acquisition of these skills (Padilla et al., 2020).

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