The impact of becoming a parent about the perception of Internet risk behaviors

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Abstract

The object of this research is to learn about the perception held by the adults of the risk behaviors related to digital technologies and to compare their perception with that of the adolescents. Adults perceive Internet risks differently from adolescents. Being a father or a mother may modify this perception vis-á-vis their children. To do this, a quantitative and descriptive study was carried out. Based on a questionnaire, in which 1,383 individuals participated: 259 adults and 1,124 adolescents. The results confirm that: a) the adults have a high perception of the seriousness of risk behaviors; b) being a parent is a that increases this perception; and c) there are significant differences in the perception of risks between adults and a part of the adolescents, who are mainly older boys. Among the conclusions, we would highlight the need to incorporate training processes for young people aimed at encouraging critical thinking around risk behaviors, in which both adolescents and adults participate together. This will mean that the perception of risk behaviors will increase in an efficacious way, as well as fostering a more responsible use of digital technologies by adolescents.

Key words: internet, risks, technologies, adolescents, parents.

The impact of becoming a parent on the perception of Internet risk behaviors

1. Introduction

The term 'risk' is so old that it takes us back to the very beginning of human existence. Echemendia (2011) defines risk as the possibility of losing something (or someone) or something that leads to an undesired, negative or dangerous outcome. Klinke & Renn (2002) understand risk as the possibility that human actions or other circumstances may imply consequences, which affect different aspects that people attach value to. This second meaning is the one most closely related to the subject of the Internet and social media, the object of study of this article. New technologies are instruments that can generate enormous benefits but also risks for the people who use them.

Many parents worry when they see their children connected to the Internet and social media via a computer screen or mobile telephone (Echeburua, Labrador & Becoña, 2009; Parra, 2010). Nevertheless, parents use the Internet like their children, although they behave differently online. Parents participate in risk behaviors on the Internet (electronic aggression, intentional harassment and communication with strangers online), even though they may be concerned about the security of their children on the Web, specifically due to exposure to sexually explicit and other strange materials. The main concern of parents is that they do not know where to find information on risky behavior experiences in the Internet (Dowdell, 2013).

Furthermore, the perception of teenagers in regard to how serious certain Internet actions are is influenced by the family context (Rial, Gómez, Braña & Varela, 2014). Parents also perceive the risks inherent to the Internet, but in a different way to their children. The way they think, which is often analogical, clashes with the digital notion of existence held by their descendants. We should remember that teenagers have smartphones, which many parents do not understand, which means that they escape parental control. Some authors (Estévez, Murgui, Musitu & Moreno, 2008; Olivas, Jiménez, Rubio, 2016) correlate family communication with Internet use, indicating that it is an effective tool for preventing compulsive Internet use, and therefore for reducing certain online risks.

In line with the types of electronic threats on the internet, De Moor, Dock, Gallez, Lenaerts, Scholler & Vleugels (2008) describe three types of risk: content, commercial and contact. Content risks include pornography, plagiarism, illegal downloads and the lack of critical thinking on the Web. Commercial risks include privacy, spam and aggressive selling, and finally, contact risks are those related to cyberbullying, addiction to the Internet, grooming and sexting.

Reviewing the risk situations related to the use of technology, we observe that Bauman (2010); Garaigordobil (2015); Gofin & Avitzour (2012); Juvoven & Gross (2008); Katzer, Fetchenhauer & Belschak (2009); Lauren & Ratliffe (2011); Ortega, Calmaestra & Mora-Merchán (2008); Pengpid & Peltzer (2019), Slonje & Smith (2008) and Walrave

& Heirman (2011) confirm that cyberbullying tends to occur more among adolescents (12-18 years). Cases of sexting are more common among younger people aged 14 to 16 (Fajardo, Gordillo & Regalado, 2013), grooming is more frequently found in young people between 9 and 13 (Balanza & Romero, 2014), while addiction to the Internet and digital technologies occurs more often in young people with an average age of 22 (Cruzado, Matos & Kendall, 2006), although it is also found in teenagers (Arias, Gallego, Rodríguez-Nistal & del Pozo, 2012). Furthermore, as noted by Lareki, Martínez de Morentin, Altuna & Amenabar (2017), older teenagers, and particularly males, are those who have a lower perception of risk.

It is also possible to present a typology of parental behavior models with two variants that determine the quality of their children's' activities on the Internet. On one hand, the interest shown by parents and, on the other, their willingness to educate their offspring. These two variants have proved to be the critical factors in reducing the risk of addition to the internet. There is also a possibility of a third variant of parental behavior, based on the creation of conditions that foster the best possible participation of adolescents in cyberspace (Wąsiński & Tomczyk, 2015).

1.1. Perception of teenagers regarding the level of seriousness of Internet risk behavior

Having studied the existing bibliography on how teenagers perceive Internet risk behavior, two elements repeatedly appear in most of the studies carried out. The first has to do with the level of digital literacy required for secure behavior online. According to Sefton-Green, Marsh, Erstad, & Flewitt (2016) the level of digital literacy of children is high and their use of the internet includes basic everyday activities. The development of digital literacy involves their understanding of the world, of social relations and the implications their use of the Internet may have for their education in general. Rodríguez-de-Dios, Van Oosten, & Igartua (2018) also point out that secondary school age adolescents with a higher level of digital literacy take advantage of more opportunities on the Web, even though they may run more risks.

The second factor is that children should have a perception of the seriousness of online risks. Whether a child feels uncomfortable as a result of online experiences depends on demographic factors, the resources that a child has to deal with these experiences and the mediation he/she receives from his/her parent(s). (Livingstone, 2019). Children who have a higher perception of online risks are less exposed to such experiences than children with a lower perception, even though they may have a higher level of digital literacy (Teimouri, Benrazavi, Griffiths & Hassan, 2018).

Generally-speaking, teenagers are confident about surfing the Internet, communicating online or contacting strangers online. They consider themselves mature and self-sufficient to safely surf the Internet (Espinar & López, 2009; Hasebrink, Livingstone & Haddon, 2008; Livingstone & Haddon, 2008; Lobe, Livingstone & Haddon, 2007). Regarding the perception of teenagers with respect to the Internet, García, López de Ayala & García (2014) differentiate between two dimensions: auto-perception of the risk

situations to which the adolescents have been exposed and hetero-perception (teenage perception) of the risk situations occurring in their peer group environment. In both cases the perceived level of seriousness is low.

A state-of-the-art review considers that adolescents perceive no particular risk online in many of their actions (Lareki, Martínez de Morentin, Altuna & Amenabar, 2017). For example, online addiction or dependency, illegal downloads and access to inappropriate content are not considered to be risks or, at least, not in their full expression. However, referring to their online relationships, they are worried about actions or content which may make them look bad within their peer group and in certain situations related to contact with strangers, although they claim to have sufficient skills to deal with any problems which could arise in this respect (Martínez, García & Sendín, 2013). Participating in chats with strangers is an action which teenagers do not consider involves the slightest online risk, although it is the group which finally assumes these risks (Jiménez, Garmendia, & Casado del Río, 2015). Summing up, adolescents have an image of social media as something that does not contain danger.

The high level of confidence shown by adolescents coexists with divergences of age and gender. Younger users are more cautious when it comes to contacting strangers or revealing certain kinds of information online (García, 2011). As they get older, the risk situations to which the adolescents are subjected increase, and there is a rise in the perception or level of awareness of the dangerous use others may be making of the Web.

As far as gender is concerned, boys recognize to a greater degree that they are subject to voluntary or involuntary exposure to inappropriate content. The differences are particularly notable regarding pages with sexual content. It is also boys who seek greater contact with strangers, while girls receive more contact requests from strangers and are more aware of the risk that this entails (García, López de Ayala & García, 2014).

1.2. Perception of adults regarding the level of seriousness of risk behavior on the Web

Although we analyze different variables in teenagers and in adults in this article, the concept of adult has been divided into two samples: on one hand, parents and on the other, adults who are not parents.

1.2.1. Perception of parents

Generally speaking, parents consider themselves to be well-informed about the risks of providing personal data online and perceive an even greater risk when sharing their own photos or videos, data related to their medical backgrounds or information related to their personal relationships or partners. Parents tend to place greater value on secure access to information, perceiving greater risk in behaviors of greater privacy (Ayuso, 2014). Although communication on the Internet is mainly between people who know each other personally, users also come into contact with people with whom no previous personal contact has existed, and parents express greater concern over actions entailing virtual

contact with strangers (Law, Shapka & Olson, 2010; Torrecillas-Lacave, Vázquez-Barrio & Monteagudo, 2017).

The level of digital literacy of parents with regard to the use, risks and benefits of the social media that adolescents use is low. Parents do not have control and supervision strategies regarding their use. It is necessary to make parents literate in the use of the most commonly used social media so that they can acquire digital skills in their use and an awareness of the risks that both parents and their children are exposed to on the Internet (López, Robles, Gómez & Hernández, 2017).

However, the different studies analyzed coincide in that parents are unaware of the online dangers lurking for their sons and daughters, or that, if anything, they act rather unreasonably (Sureda, Comas & Morey, 2010); they underestimate the risks of online access and impose little supervision (Melamud, Nasanovsky, Otero, Canosa, Enríquez, Köhler, Goldfarb, Matamoros, Ringuelet, Stechina & Svetliza, 2009); they are not particularly concerned about Internet relationships between their children and their friends (Espinar & López, 2009) and they are totally unaware of the negative effects and consequences that new technologies can have on their children with respect to the way they think, speak, generate affection and socialize (García, Machado, Cruz, Mejías, Machado & Cruz, 2015).

Looking at the age of the parents and their perception of Internet risk, a number of studies show that the majority of younger parents (parents with children under 3 years of age) have a low perception of risk regarding the consumption of this kind of technologies. Similarly, parents with a low level of information on this issue underestimate the risks of these technologies and accept their supposed advantages in terms of usefulness (García et al., 2015).

If we compare the perception of risk between parents and adolescents in regard to social media use, parents have a rather negative view of these social media whereas adolescents have a more positive perception. Neither parents nor adolescents are fully aware of the risks caused by inappropriate use of the Internet. Adolescents perceive the Internet as a more or less safe medium, unlike their parents, who do not agree that using the Internet is safe (Sanabria, 2011).

1.2.2. Perception of risk in adults who are not parents

According to Sánchez & Ruiz (2015), adults who are not parents (specifically in the case of university graduates) affirm that they are mostly aware of Internet risks. However, a large majority of them uploads images to social media without asking permission from the people who appear in them (42.6%), and only 9.6% never do so without asking. The majority of adults have never been asked to give their permission to publish a photograph of them on social media. If we analyze having been the object of some kind of online abuse, the vast majority of adults who are not parents (87.2%) say that they have never been abused in any way, even though at times they did not completely agree with some of the comments made in regard to their person.

In recent years, inadequate use of the Internet and social media is giving rise to situations of cyberbullying in our society. While numerous studies have been carried out on adolescents, they have also been carried out on adults for some time now. For example, Alexy, Burgess, Baker & Smoyak (2005) found that male adults were more likely than females to suffer cyberbullying. They qualify this by saying that the individuals bullied online were the victims of an intimate ex-partner.

In the same sense, Fogel & Nehmad (2009) affirm that risk attitudes exist among both male and female adults, although concerns are greater among girls in relation to the circulation of their identity and privacy.

Given all of the above, we know that risk behavior exists among the users of digital technologies, but how serious do adults (parents and non-parents) consider certain risk behaviors to be in relation to these digital technologies? Is age a key factor in the different perceptions of risk, or is another factor determining in regard to this perception? Finally, are there significant differences in the perception of adolescents and adults (parents and non-parents) in regard to risk behaviors?

2. Material and Methods

The research presented here is part of an empirical, quantitative and prospective study that seeks to go deeper into the perceptions held by two different exponents of a single phenomenon: the seriousness of carrying out certain actions on social media. The data was collected in a single period of time, with no manipulation of the variables that naturally occur. This is therefore a cross-sectional study in which different variables have been related inferentially, with the age variable being the most important. The results obtained after carrying out a series of analyses have enabled us to discover adolescents' perceptions of digital technology use and, in turn, to compare this perception with that of adults.

2.1. Research problems and hypotheses

- Adults (parents and non-parents) perceive a greater risk in inadequate uses and actions on the Internet in comparison with adolescents.
- Age is a factor that can have an influence on a greater perception of risk in different uses and areas of the Internet.
- Being a parent is a factor that leads to a greater perception of risk in inadequate uses and actions of the Internet.

2.2. Participants

In line with the objectives addressed in this study, a sample of 1,383 participants was taken from a very wide variety of groups, all of them citizens of the Basque Country and

Navarre (two autonomous regions in Europe which belong administratively to Spain). The first group consists of 259 adults with direct connections to the world of education. This group is subdivided into 89 parents (39.4%), organized according to the schools attended by their children, and all of them have teenage children falling within the sample age range of 9 to 16. The remaining 170 (65.6%) members of this group are adults who are not parents. All are over 18 years of age (the age at which people become adults in the territory where the study was carried out). The second group corresponds to 1124 adolescents aged between 9 and 16, from 17 schools in the two regions.

2.3. Data collection

In line with the research objectives, an online questionnaire was designed for the adolescents (White, Carey & Daily, 2001) according to the steps established by Lumsden (2007) and taking the recommendations of Norman, Friedman, Norman & Stevenson (2001) into account. Once the questionnaire had been completed by the adolescents, the questions were adapted for the adults (parents and non-parents), although in this case the questionnaire was circulated in paper format.

In both cases the questionnaire is structured around 5 dimensions measuring "Habits of use", "Content and downloads", "Handling of Data", "Relationships" and "Posting". The items corresponding to each dimension can be consulted in Table 1.

The questionnaire was previously validated by González, Martínez de Morentin & Altuna (2018), showing an adequate grouping of the items within each dimension. To estimate the reliability of the present questionnaire, a Cronbach's alpha analysis was carried out, with the test showing high internal consistency: 0.970 (Norman & Steiner, 2008). This test was also used to analyze each of the questionnaire's five dimensions (see Table 1).

2.4. Procedure

The data collection procedure was as follows: having obtained the authorization of parents and the agreement of each selected school, the adolescents completed the questionnaire online. Data collection for the parents' group was done at meetings in each of the schools where the adolescents participated in the online questionnaire. Data collection for the group of adults who are not parents was done at the same time. The study was approved by the Ethics Committee of the University of the Basque Country (UPV-EHU).

2.5. Data analysis

The data collected was analyzed using the SPSS 25.0 statistical program. In the first place, descriptive analyses were made of the variables, and the composed variables of each dimension were created. Later, to ensure that the parametric analyses were appropriate, the number of participants in each group, the equality of variances and the normality test were carried out through a Levene and Kolmogorov-Smirnov analysis. Then, if these conditions were not fulfilled, Kruskal Wallis (non-parametric) and Dunn-

Bonferroni tests were used to reveal statistical differences between the two groups. In this case, the effect size was calculated with (ε^2) Epsilon Squared (very similar to ω^2 Omega Squared) because it is a better choice than other tests when the sample size is small, as a result of its corrections (Hays, 1994; Kirk, 1995; Maxwell & Delaney, 1990). Epsilon-Squared is also a more conservative estimate of effect size than the better-known eta-squared measure (Keppel, 1982).

In the other cases, when variance equality was similar between groups and the number of participants to be compared in each group was higher than thirty, parametric analysis was applied due to its statistical robustness (López-Roldán & Fachelli, 2015). Following this criterion, an analysis of variance (ANOVA) for the age factor, (adolescents and adults) and a T-Test for the type of adult (parents and non-parents) were carried out. Similarly, an effect size was carried out by age group (Hedges' g coefficient) and adult type (Cohen's d). Lastly, fulfilling the necessary assumptions such as autocorrelation (Durbin-Watson), linearity, homoscedasticity (Levene test), normality (Kolmogorov-Smirnov) and collinearity (VIF), a simple linear regression analysis was made to study the relationship between risk perception and the type of adult (parents and non-parents).

3. Results

In an initial analysis of the mode (the most repeated option) of the answers given in the questionnaire, we observed that adults (parents and non-parents) tend to perceive the vast majority of risk behaviors related to digital technologies as having a severe level of seriousness. In Table 1 we see that there is at least one behavior which is classified as "mild" in all of the dimensions analyzed except for "Posting". Furthermore, in all of the dimensions, with the sole exception of "Relationships", there is at least one behavior considered "moderate" (two in the "Habits of Use" dimension). Furthermore, the perception of risks as "severe" is the one chosen most in the different dimensions analyzed by the questionnaire.

Table 1

Moreover, as we mentioned when reviewing the state of the art, there are indications of the existence of differences in digital technology use with respect to age. This prompted us to analyze whether the perception of seriousness of certain risk behaviors also varies with respect to this factor. We therefore assigned a value of 1 to behaviors considered mild, 2 to those considered moderate, and 3 to those considered severe. We subsequently obtained the mean of each dimension according to three previously established age groups (18-30, 31-40 and > 40).

In view of the results obtained in Table 2, adults (parents and non-parents) falling within the 31-40 and 41-50 age groups tend to consider the risks associated to digital technology use, in all dimensions, as being higher than those falling at either end of the two groups (18-30 and the over 40s). These differences are statistically significant after a Kruskal-Wallis test for all the dimensions studied: "Habits of use" with p=.004 and Epsilon

Squared=.004, “Content and downloads” p=.006 and Epsilon Squared=.004, and “Handling of data” p=.000 and Epsilon Squared=.008, “Relationships” p=.001 and Epsilon Squared=.005, “Posting” p=.021 and Epsilon Squared=.003, “Risk Perception” p=.000 and Epsilon Squared=.008. Epsilon Squared values around of .010 were considered as small effect sizes, values around .06 as medium effect sizes, and values higher than .138 as large effect sizes (Field, 2013, Allen, 2017).

Table 2

Age therefore seems to be a relevant factor in the perception of seriousness with respect to risk behaviors related to the use and handling of digital technologies. However, despite the fact that all dimensions have statistically significant differences their influence is limited (Epsilon Squared values show a small effect size), both with respect to the age group, which invites us to continue investigating with new analyses. Post-hoc Dunn-Bonferroni tests were therefore run with the intention of studying the real difference between the adult age groups.

Specifically, in Table 3 we observe that significant differences in the perception of the seriousness of “Habits of use” occur among the 18-30 and >40 age groups, with p=.007; in the perception of the seriousness of “Content download” among the 18-30 and >40 age groups, with p=.022. In case of the seriousness of “Handling of data” two statistical differences appeared among the 18-30 and >40 age groups, with p=.001, and also among 18-30 and 31-40 with p=.008. Regarding “Internet relationships” there are differences between the 18-30 and >40 age groups, with p=.001; and lastly, in the seriousness of “Risk perception” there are two statistical differences among the 18-30 and >40 age groups with p=.000, and among 18-30 and 31-40 with p=.013. There were no statistical differences in “Posting”.

Table 3

New analyses have been developed in this direction. No significant differences have been found when focusing on adult gender, although significant differences were found for all of the dimensions regarding the fact of being a parent (father/mother) compared to adults with no children after carrying out the T- Test. Table 4 shows that adults who are parents tend to consider the risks to be more serious. The mean differences between the two groups are significant in all cases (p=.000), with a high effect size in all of these differences, given that all of the latent variables studied resulted in a Cohen’s d >.85, where d=.20 is the small effect size, d=.50 the medium effect size and d=.80 the large effect size (Cohen, 1988).

Table 4

In order to answer the questions posed in this research study, an analysis was required to establish whether differences exist between the perception of adolescents and that of adults (parents and non-parents). We started with the study by Lareki, Martínez de Morentin, Altuna & Amenabar (2017) on teenagers’ perception of risk behavior related to

digital technologies, where two teen profiles were presented: one majority group largely made up of younger girls (Teens G1) and another minority group mainly consisting of older boys (Teens G2). Taking these teen clusters into account, we ran an analysis of variance (ANOVA), which is presented in Table 5. Here we observe significant differences in all dimensions (p=.000), where the perception of subjects belonging to the different groups differs. The effect size is also very high in all the cases, with the eta-squared (η^2) values being higher than .138 as large effect sizes in all dimensions and variables (Kirk, 1996).

Table 5

After running the Tukey B post-hoc test (see Table 6) we observed that the differences were significant between the Teens G2 group and the other groups (Teens G1 and Adults) in all the dimensions analyzed. Regarding the differences between the Teens G1 and Adults groups, no significant differences were found in any variable, except for the "Posting or publications" dimension, where differences were found between all three groups.

Table 6

Specifically, the table offers results with significant differences in the perception of seriousness, with a significance of p=.000 and a high Hedges' g effect size of >2.2 in all cases of comparison made between the Teens G2 group and the Teens G1 and Adults groups. Furthermore, the difference between the Adults and Teens G1 groups only shows a significant difference in the Posting variable, with p=.000 and a Hedges' g effect size of g=.299, considering the effect size to be small (0.2), medium (0.5) and large (0.8) according to Cohen (1988).

Finally, a regression analysis was made with the dependent variable "Risk perception" in comparison with dummy variables: a) type of subject (adolescent or adult) and b) type of adult (parent or non-parent). In the prior tests to prepare for the regression analysis, only the "type of adult" variable (parent or non-parent) offered optimal data on homoscedasticity (Levene test sig= 0.702), autocorrelation (Durbin-Watson = 1.707), collinearity (VIF=1.000), and normality with Kolmogorov-Smirnov, where the type of Adult "parent" values are: Statistic =.92, df= 88 and sig=.064, and "non-parents", Statistic =0.55, df=169 and Sig=.200.

A simple linear regression was done to examine the relationship between risk perception and the type of adult (parent or non-parent). The results showed that there is a linear relationship between the two, confirmed in a Pearson´s coefficient of 0.574.

Table 7

This indicates that a significant regression equation was found (F(1.255)=125.187, p=0.000), with an R2 value =.329. This means that the R2 value (32.9% of variation in risk perception) can be explained by the type of adult, either a parent or non-parent.

Table 8

Therefore, the participants´ predicted risk perception equation would be 50.865+(-20.893) regarding the type of adult.

Table 9

4. Conclusions and Discussions

The perception of risk plays a major role as a preventive element, as perceptions of risk cause people to take protective action (Brewer, Weinstein, Cuite, & Herrington, 2004). Our study confirms that adolescents have a lower perception of the risks involved in Internet and digital technology use than adults, so it is not surprising that several studies (Englander, & McCoy, 2018, Kuss, & Lopez-Fernandez, 2016) consider this group likely to suffer addictions, cyberbullying, sexting, grooming, etc.

Despite the differences between the adolescents and the adults, the second group is not completely homogeneous because we can divide it into two subgroups with a different perception of risk: adults who are parents have a greater perception of risk than those who do not have children. A number of studies (Cebotarev, 2003; Medina, Figueras & Gómez, 2014; Valencia, 2012) have confirmed that becoming a parent changes one's perceptions around certain beliefs and represents an important change in living habits. According to our study, these changes also affect the perception of risk linked to the use of digital technologies and the Internet.

The perception of risk thus joins other factors that increase exposure to the dangers linked to the use of digital technology. For example, in the case of Internet addiction, Li, Li, Zhao, Zhou, Sun, & Wang (2017) group 14 factors into 4 categories (family, school, peer and individual) and determine that multiple-risk exposure profiles are related to Internet addiction. Similarly, Whittle, Hamilton-Giachritsis, Beech, & Collings, (2013) situate a series of risk factors linked to grooming in an ecological model that also consists of four categories (individual, family, community and culture). They establish that, apart from low self-esteem, being a girl and/or a teenager, having trouble at school or with friends and family increases vulnerability in the face of grooming.

If we go into greater detail on family factors, we would highlight that the lack of fluid communication with parents, or parental behaviors that are perceived by adolescent children as authoritarian, make it more likely that the latter may spend more hours on the Internet to make up for this lack of communication at home (Gomes & Sendín, 2014). As

a result, the Internet risk increases when intra-family communication is weak (Soler, López-Sánchez & Lacave, 2018).

Taking account of the results obtained in this study, it is essential to set educational projects in motion aimed at fostering the responsible use of digital technologies, to make it possible to increase the levels of risk perception among the most vulnerable group, in our case adolescents. Nowadays educational materials and programs exist which focus on achieving this objective, and they have been positively appraised. Some are aimed at children and adolescents and others at parents.

Among the materials aimed at parents, Bleckmann, Rehbein, Seidel and Möble (2014) interestingly report moderate changes in media-related parenting style, after the application of a program targeting parents to prevent the problematic use of screen media by children, while Clarkson & Zierl (2018) have shown that it is also possible to achieve satisfactory results with an online program.

Programs aimed at children and adolescents have shown good levels of success when they have been created from an overall perspective, with the aim of improving digital literacy and media competence (Cuervo, 2017; Fernández-Montalvo, Peñalva, Irazabal & López-Goñi 2017) and when they have been implemented to prevent specific risks linked to the technology. Positive results have been seen recently in programs that promote prosocial behavior and can reduce bullying and cyberbullying (Campbell, & Bauman, 2018; Leung, Wong & Ferver, 2019; Mäkelä & Catalán, 2018), interventions aimed at preventing excessive or addictive use (Li, Shi, Ji, Wang, Wang, Wang, Li, Yuang, & Liu, 2017; Toto & Strazzeri, 2019; Vondráčková & Gabrhelik, 2016), programs that set out to reduce the prevalence of sexting in the Internet and on social media (Del Rey, Mora-Merchán, Casas, Ortega-Ruiz & Elipe, 2018), and other preventive measures designed to reduce grooming and sexual abuse (Van Brunt, Murphy, Pecara-Kovach and Crance, 2019; Wurtele, & Kenny, 2016).

Given that other studies have shown that the risk perception of every teenager can be influenced both by another group of teenagers and by adults (Knoll, Magis-Weinberg, Speekenbrink & Blakemore, 2015), and taking the results of our research into account, it would be advisable for these programs to incorporate processes in which adults who are also parents can interact with older teenagers to increase their perception of risk and therefore encourage them to use the technology in a safer way. Once trained, these same adolescents could participate in training processes aimed at younger teenagers, thereby creating an intergenerational sequence. This methodology is the result of applying the socio-constructivist focus of education (Vygotsky, 1978), which, combined with a greater involvement of parents in the process of socializing adolescents over the Internet (Yubero, Larrañaga, Navarro, & Elche, 2018), could improve parent-children communication and would enable an effective increase in their perception of risk behavior while fostering more responsible digital technology use among teenagers.

We would point out that young people now understand the importance that media education and literacy have in modern society (Milenkova, Keranova & Peicheva, 2020),

so a favorable response is expected from this group to the implementation of this kind of program, both in the school and family environments.

4.1. Limitations of the study and future lines of research

The study presented here has enabled us to understand how perceptions of risk vary, based on different characteristics and depending on age. However, despite the extensive sample obtained -particularly in the group of adolescents- the study is restricted to a particular sociocultural and economic reality. The results obtained here could possibly be applied to other contexts of similar characteristics but given the importance of the family and cultural context in the social sciences, and specifically in the area examined in this study, the extension of its conclusions to other situations needs to be done with caution. Moreover, bearing in mind the speed at which modern society changes and the constant appearance of new digital technologies, the conclusions presented here need to be interpreted bearing in mind the moment at which the data were collected and the digital technologies in existence at the time of carrying out the study.

In the future, two new lines of research are being considered on the basis of this study. First, it is necessary to continue making a detailed study of the changes that occur in the perceptions of adults regarding Internet risks; in this study, we have been able to determine that being or becoming a parent changes the perception of risk, but why does this change take place? Is fear a key variable? Do fathers have the same perception as mothers? Above all, how does this change affect the use made by the parents themselves of the technology?

Furthermore, as our results suggest, if spaces of dialogue between parents and adolescents are incorporated into training programs that set out to bring about a responsible use of the Internet and digital technologies, it is worthwhile carrying out longitudinal studies to determine the effect of these new measures and to go into greater detail on the factors that can bring about significant changes designed to prevent risk behaviors.

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Table 1: Mode of inappropriate behaviors in relation to the level of seriousness in adults

Dimension	Seriousness	Behavior
Habits of use (Cronbach's alpha .894)	Mild	Gaming/browsing at home without permission
	Moderate	Gaming/browsing in time set aside for other tasks
		Lying to parents about time of use.
	Severe	Using their mobile phones at school (without permission)
		Spending more than 2 hours a day on social media
		Encouraging others not to respect Internet/game rules of use
		Helping a friend or sibling to use apps without permission
Content and downloads (Cronbach's alpha .763)	Mild	Downloading films with no heed to their copyright
	Moderate	Copying work from the Internet
	Severe	Accessing inappropriate content
		Installing apps requiring payment without their parents' permission
		Using their parents' Internet passwords without permission
		Making online purchases without permission
Handling of data (Cronbach's alpha .901)	Mild	Lying about their age when creating a profile
	Moderate	Using very easy passwords
	Severe	Creating an account with a false name
		Disclosing personal passwords to third persons
		Disclosing private information in their profiles
		Stealing another person's identity
Relation-Ships (Cronbach's alpha .854)	Mild	Ignoring friends on social media
	Severe	Adding people unknown to them to social media
		Slandering friends on social media
		Making threats on social media
		Arranging to meet people they have met on social media
Posting (Cronbach's alpha .918)	Moderate	Posting photos/videos of themselves without permission from their parents
	Severe	Posting photos/videos of friends without their permission
		Posting photos/videos with friends without permission from their parents
		Posting compromising photos/videos of friends
		Posting photos, videos or comments that favor bullying
		Posting inappropriate content
Risk Perception (Cronbach's alpha .969)	Severe	Habits of use
	Severe	Content and downloads
	Severe	Management of data
	Severe	Relationships
	Severe	Posting

Table 2: Differences in adult mean rank in relation to different Internet risks

				KRUSKAL WALLIS		
				H	Sig.	Epsilon Squared (ε^2)
		N	Mean rank			
Habits of use	18-30	163	117.88	10.867	.004	.004
	31-40	17	151.12			
	>40	78	149.08			
Content and downloads	18-30	163	118.57	10.211	.006	.004
	31-40	17	159.71			
	>40	78	145.76			
Handling of data	18-30	163	114.18	19.758	.000	.008
	31-40	17	170.79			
	41-50	78	152.51			
Relationships	18-30	163	114.18	14.054	.001	.005
	31-40	17	170.79			
	41-50	78	152.51			
Posting	18-30	163	114.18	7.698	.021	.003
	31-40	17	170.79			
	>40	78	152.51			
Risk Perception	18-30	163	113.15	20.703	.000	.008
	31-40	17	167.32			
	>40	77	154.09			

Table 3: Analysis of Internet risks perception in relation to the adult age groups

Dependent variable	Post Hoc Test	Sample 1 - Sample 2 (Age)	Test statistic	Std. Error	Stad. Test Deviation	Sig. *P*	Adj. Sig.[a]
Habits of use (Seriousness)	Dunn Bonferroni	18-30 - 31-40	-33.240	18.915	-1.757	.079	.237
		18-30 - >40	-31.200	10.218	-3.053	.002	.007*
		>40 - 31-40	2.041	19.865	.103	.918	1.000
Content and downloads (Seriousness)	Dunn Bonferroni	18-30 - 31-40	-41.138	18.811	-2.187	.029	.086
		18-30 - >40	-27.195	10.161	-2.676	.007	.022*
		>40 - 31-40	13.943	19.755	.706	.480	1.000
Handling of data (Seriousness)	Dunn Bonferroni	18-30 - 31-40	-56.613	18.891	-2.997	.003	.008*
		18-30 - >40	-38.332	10.205	-3.756	.000	.001*
		>40 - 31-40	18.281	19.839	.921	.357	1.000
Internet relationships (Seriousness)	Dunn Bonferroni	18-30 31-40	-29.192	18.562	-1.573	.116	.347
		18-30 - >40	-36.504	10.071	-3.625	.000	.001*
		31-40 - >40	-7.313	19.516	-.375	.708	1.000
Photo and video publications (Seriousness)	Dunn Bonferroni	18-30 - 31-40	-40.425	18.694	-2.163	.031	.092
		18-30 - >40	-21.101	10.098	-2.090	.037	.110
		>40 - 31-40	19.325	19.632	.984	.325	.975
Risk perception (Seriousness)	Dunn Bonferroni	18-30 - 31-40	-54.173	18.945	-2.859	.004	.013*
		18-30 - >40	-40.941	10.279	-3.983	.000	.000*
		>40 - 31-40	13.233	19.919	.664	.506	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed.
* The significance level is <.05.
Significance values have been adjusted by the Bonferroni correction for multiple tests

Table 4: Significant differences between parents and adults with no children

Group Statistics									
	Type of Adults	N	Mean	Mean differences	Std. Deviation	Std. Error Mean	T Test	Sign	Cohen's d
Habits of use	Parents	89	2,5570	0.4454	.31064	.03293	9.285	.000	1.08
	Non-parents	169	2,1116		.45348	.03488			
Content and downloads	Parents	89	2,6067	0.3345	.35555	.03769	7,335	.000	0.96
	Non-parents	169	2,2722		.34437	.02649			
Handling of data	Parents	89	2,5712	0.3878	.37173	.03940	7,375	.000	0.96
	Non-parents	169	2,1834		.41613	.03201			
Relationships	Parents	88	2,6364	0.2897	.30255	.03225	6,876	.000	0.86
	Non-parents	169	2,3467		.35221	.02709			
Posting	Parents	89	2,8221	0.3201	.26803	.02841	7,774	.000	0.91
	Non-parents	169	2,5020		.38746	02980			
Risk Perception	Parents	88	2,6380	0.3548	,26562	.02832	9,616	.000	1.20
	Non-parents	169	2,2832		,30754	.02366			

Table 5: Mean difference between adolescents and adults (parents and non-parents) in regard to their perception of the seriousness of Internet risks

Descriptive statistics								Anova		
						95% Confidence Interval for Mean				
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	F	Sig.	η^2
Habits of use	Teens G 1	820	2.2274	.50013	.01747	2.1931	2.2616	617.02	.000	.472
	Teens G 2	304	1.1983	.29524	.01693	1.1650	1.2316			
	Adults	258	2.2652	.46095	.02909	2.2068	2.3214			
Content & downloads	Teens G 1	820	2.4232	.38383	.01340	2.3969	2.4495	1567.94	.000	.695
	Teens G 2	304	1.1294	.21597	.01239	1.1050	1.1538			
	Adults	258	2.3876	.38496	.02420	2.3417	2.4370			
Handling of data	Teens G 1	820	2.2890	.43876	.01532	2.2589	2.3191	890.14	.000	.564
	Teens G 2	304	1.1765	.27266	.01564	1.1458	1.2073			
	Adults	258	2.3172	.44115	.02768	2.2611	2.3701			
Relation-ships	Teens G 1	820	2.3939	.41535	.01450	2.3654	2.4224	1235.53	.000	.642
	Teens G 2	304	1.1553	.32630	.01872	1.1184	1.1921			
	Adults	257	2.4459	.34357	.02306	2.3870	2.4779			
Posting	Teens G 1	820	2.4652	.48022	.01677	2.4323	2.4982	1042.16	.000	.602
	Teens G 2	304	1.1864	.39521	.02267	1.1418	1.2310			
	Adults	258	2.6124	.38208	.02549	2.5536	2.6541			
Risk perception	Teens G 1	820	2.3597	.34979	.01222	2.3358	2.3837	1638.30	.000	.704
	Teens G 2	304	1.1692	.21899	.01256	1.1445	1.1939			
	Adults	257	2.4047	.33838	.02111	2.3631	2.4462			

Table 6: Significant difference between the adolescent groups and the adults (parents and non-parents)

Dimension		(J) 3 subject types	Mean difference (I-J)	Error deviation	Sig.	Hedges' g
Habits of use	Teens G2	Teens G1	1.0290*	.03057	.000*	2.267
		Adults	1.0658*	.03883	.000*	2.810
	Adults	Teens G1	.03673	.03284	.264	
Content downloads	Teens G2	Teens G1	1.2938*	.02377	.000*	3.733
		Adults	1.2599*	.03012	.000*	4.135
	Adults	Teens G1	.03384	.02546	.184	
Handling of data	Teens G2	Teens G1	1.1125*	.02743	.000*	2.776
		Adults	1.1391*	.03472	.000*	3.168
	Adults	Teens G1	.02659	.02933	.365	
Relationships	Teens G2	Teens G1	1.2386*	.02589	.000*	3.149
		Adults	1.2772*	.03404	.000*	3.825
	Adults	Teens G1	.03853	.02917	.187	
Posting	Teens G2	Teens G1	1.2788*	.03001	.000*	2.787
		Adults	1.4175*	.03940	.000*	3.640
	Adults	Teens G1	.1386*	.03375	.000*	0.299
Risk perception	Teens G2	Teens G1	-1.19056*	.02171	.000*	3.729
		Adults	-1.23549*	.02740	.000*	4.411
	Adults	Teens G1	.04493	.02311	.127	

Table 7: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,574[a]	.329	.327	14.20502	1.707

a. Predictors: (Constante), Type of Adult

b. Dependent Variable: PERCEPRISK

Table 8: ANOVA[a]

Model		Sum of Squares	df	Mean Squares	F	Sig.
1	Regression	25260.468	1	25260.468	125.187	.000[b]
	Residual	51454.534	255	201.782		
	Total	76715.002	256			

a. Dependent Variable: PERCEPRISK

b. Predictors: (Constant), type of adult.

Table 9: Coefficients[a]

Model		Unstandardized coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Desv. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constante)	50.865	1.514		33.591	.000		
	Type of adult Parents or not	-20.893	1.867	-.574	-11.189	.000	1.000	1.000

a. Dependent Variable: PERCEPRISK

Disclosure statement

No potential conflict of interest was reported by the author(s).

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