



# Family and peer support as a preventive factor of cyberviolence among teenagers. Implications according to age and gender

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## Family and peer support as a preventive factor of cyberviolence among teenagers. Implications according to age and gender

**Abstract.** The psychological and individual factors that predict cyberbullying have been the subject of numerous studies; however, less attention has been paid to relevant contextual or social factors such as family and peer support on the Internet. Some studies analyze them in isolation, but few studies examine them together, which limits their approach. Therefore, this study seeks to explore the extent to which protection networks (family and peers) can predict the likelihood of becoming a victim or aggressor of this type of violence, using a sample of 1,554 Spanish students. The study has also probed differences as a function of gender and age. The data are analyzed using a structural equation model (SEM), in which peer and family support on the Internet are used as exogenous variables, and the status as a victim or aggressor of cyberbullying as endogenous variables. The results show that the so-called "support networks", both primary and secondary, play an essential role in preventing the involvement of adolescents in cases of cyberaggression and cybervictimization. The multi-group analysis by gender and age reveals differences to be considered when diagnosing the situation and promoting socio-educational measures for the prevention of cyberbullying.

**Key words:** cyberbullying; cybervictimization; family; peer support

## El apoyo familiar y entre iguales como factor preventivo de la ciberviolencia entre adolescentes. Implicaciones según edad y género

**Resumen.** Los factores psicológicos e individuales que predicen el ciberacoso han sido objeto de numerosos estudios; sin embargo, se ha prestado menos atención a los factores contextuales o sociales relevantes, como la familia y el apoyo de los compañeros en Internet. Algunos estudios los analizan de forma aislada, pero pocos los examinan conjuntamente, lo que limita su enfoque. Por ello, este estudio pretende explorar hasta qué punto las redes de protección (familia y compañeros) pueden predecir la probabilidad de convertirse en víctima o agresor de este tipo de violencia, utilizando una muestra de 1.554 estudiantes españoles. El estudio también ha sondeado las diferencias en función del género y la edad. Los datos se analizan mediante un modelo de ecuaciones estructurales (SEM), en el que se utilizan como variables exógenas el apoyo de los compañeros y de la familia en Internet, y como variables endógenas la condición de víctima o agresor de ciberacoso. Los resultados muestran que las denominadas "redes de apoyo", tanto primarias como secundarias, juegan un papel esencial en la prevención de la implicación de los adolescentes en casos de ciberagresión y cibervictimización. El análisis multigrupo por sexo y edad revela diferencias a tener en cuenta a la hora de diagnosticar la situación y promover medidas socioeducativas para la prevención del ciberbullying.

**Palabras clave:** ciberacoso; cibervictimización; familia; apoyo entre iguales

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## Introduction

Cyberbullying has become a major youth problem around the world (Kowalski et al., 2019a). One of the online risks of greatest concern is cyberbullying, which can be defined as a type of deliberate and repeated harassment over time through a digital device with Internet access. It can be carried out by a single individual or group of people and is directed at another person who is unable to defend themselves (Hinduja & Patchin, 2008; Smith et al., 2008). Cyberbullying occurs via digital media and is characterized by intentionality, abuse of power, and repetition. Moreover, the practice has serious consequences for adolescents, including anxiety and depression, low self-esteem, stress, anguish, loneliness, and even suicidal thoughts (Kwan et al., 2020). Studies have identified some of the most common contexts and ways in which such cyberaggressions occur, such as through online gaming (Li & Pustaka, 2017), evaluative comments, and online rumors (Cebollero-Salinas et al., 2022).

Successful efforts to overcome cyberbullying are closely linked to proactive and assertive coping strategies such as dialogue with the bully and communicating the problem to others capable of helping to find an effective solution (De La Caba & Lopez, 2013; Sitichai & Smith, 2018). When seeking out and adapting strategies to counter cyberbullying in a given situation, there are several factors to consider: self-esteem, empathy, prosocial behavior, family cohesion, school cohesion, and positive experiences in the school context (Chan & Wong, 2017; Zych et al., 2019). More specifically, these factors have been associated with a better resolution of cyberbullying cases among students (Chan & Wong, 2017).

However, Guo et al. (2021) highlight that, although individual factors related to cyberbullying have been extensively studied, more research is needed on contextual factors such as family (Martín-Criado et al., 2021), the school context, and peer support and coordination between them (Bautista & Vicente, 2020). Since both contexts seem to be closely related to cyberbullying, it is pertinent to delve more deeply into them.

### ***Family as a protective factor against the development of cyberbullying victimization or aggression***

We understand family supervision as attention from the group of adults (mother and/or father or legal guardian) in charge of a minor, who act as mediators between their sons and daughters and their use of the Internet and technological devices. This mediating position means that they can play a fundamental role in helping their children to progress in a healthy way in their technology use (Benedetto & Ingrassia, 2021). Studies that analyze gender and age show that girls are more supervised than boys and that this gap decreases with age (Smahel et al., 2020). It should be noted that different studies have found that, depending on fami-

lies' level of permissiveness when it comes to how their sons and daughters use the Internet, certain factors (Sasson & Mesch, 2014; Song et al., 2020) can influence both the benefits and risks of its use (Khurana et al., 2015), with cyberbullying victimization or aggression standing out as risks (Benedetto & Ingrassia, 2021).

In terms of investigating the benefits of family involvement, several studies (Baldry et al., 2019; Martín-Criado et al., 2021) have looked at the relationship between being a victim or aggressor of cyberbullying and family support. In their results, they found that adolescents whose families monitor and guide them in their Internet activity were less likely to be victims or perpetrators of cyberbullying (Uslu & Durak, 2022).

Conversely, the absence of family support or inappropriate technology use by parents

can negatively affect children's current and/or future use of technology (Baldry et al., 2019; Benedetto & Ingrassia, 2021). Sasson and Mesch (2017) pointed out that very strict control by families could be as negative as the lack of it, increasing the risk of negative behaviors on the Internet, especially cyberbullying.

Moreover, even when aggression (whether offline or online) has occurred, studies such as Shaw et al. (2019) show how family and peer support promote resilience in the face of bullying and cyberbullying.

### ***Peer support in the school context as a factor preventing cyberbullying: Cyberbullying Prevention***

Adolescence is a transitional stage characterized by significant psychosocial changes, wherein positive interpersonal peer relationships are a central context for the search for one's own identity (Allen and Loeb, 2015), and during which adolescents develop their social skills and behaviors (Collins and Laursen, 2004).

In fact, along with family support, the role of peers has an influence on behaviors such as bullying and cyberbullying. Íñiguez-Berrozpe et al. (2021) show how peer support, in the classroom and outside it, is essential in preventing involvement in aggressive behaviors (whether as aggressor or victim). Also, as evidenced by a recent meta-analysis, adolescents who feel rejected by their peers or experience greater isolation and low peer support are more likely to be cyberbullies (Zych et al., 2019). In fact, in a study of 4,000 adolescents aged 11-18 years, they found evidence that schoolchildren who were school-satisfied, for example, because they had few fights between friends, were less likely to be involved in cyberbullying (Lee and Shin, 2017).

Similarly, numerous studies agree on the important role played by peer support and a feeling of integration in protecting adolescents from cybervictimization, with some researchers examining both early adolescents aged 11-12 years (Kollerová & Smolík, 2016) and others looking at broader samples between 11 and 15 years old (Marengo et al., 2021), according to a review by Zych et al. (2019), which concluded that low levels of perceived peer support are significantly correlated with cybervictimization. In the same vein, Kowalski et al.

(2019b) highlight that adolescents who have been victims of face-to-face bullying, rather than being supported, are more likely to be cyberbullies.

As evidenced above, both lack of family and social support from friends and acquaintances are relevant factors for the prevention of both profiles of cyberbullying (Lee & Shin, 2017; Marengo et al., 2021). However, there are hardly any studies that analyze them jointly. Among the few examples is a study with Indonesian adolescents aged 15-17 years, where several determinants of cyberbullying were analyzed, and social support turned out to be the strongest predictor, followed by self-esteem and family social support (Handono et al., 2019). Elsewhere, a longitudinal study confirmed that the influence of parental support on cyberaggression and cyberbullying was mediated by peer attachment relationships (Charalampous et al., 2018).

### ***Gender and Age: Variables for Understanding Cyberbullying***

The literature highlights the role of gender in the different profiles of cyberbullying, but the evidence as to gender differences is mixed. A large number of studies conducted with adolescents suggest that boys are more often aggressors (Bae, 2021; Guo, 2016; Larrañaga et al., 2018; Lee and Shin, 2017; Sorrentino et al., 2019; Wong et al., 2018), and another group of studies finds that it is girls who are most often victimized (Alvarez-Garcia et al., 2017; Kowalski et al., 2019; Lee and Shin, 2017; Palermi et al., 2017; Rey et al., 2018). However, other research has come to opposite findings, observing that girls are most at risk of participation in this kind of bullying (Kowalski et al., 2019) and that boys are most likely to be the targets (Ang, 2015). Still other studies suggest that there are no gender differences (Giménez-Gualdo et al., 2015; Wong et al., 2018). Such inconsistencies in the literature point to the likelihood that any gender differences may in turn be dependent on other variables such as context (Sun et al., 2016).

Studies analyzing the role of age have also found inconsistent results. For example, some researchers have found that cyberaggression increases with age (Garaigordobil, 2015; Walrave & Heirman, 2011), while others have recorded decreases among older samples (Moore et al., 2012; Tokunaga, 2010) and still others have found no differences (Garaigordobil, 2015; Larrañaga et al., 2018; Marín-López et al., 2020). In cybervictimization, the situation is similar; there are studies of adolescents that find no differences as a function of age (Bauman, 2010; Walrave and Heirman, 2011). However, other studies have found that cybervictimization decreases with age (Mishna et al., 2012), and, conversely, other studies have concluded that it increases (Monks et al., 2012; Rey et al., 2018). In addition, there are papers that show a curvilinear relationship between victimization and age, observing fewer victims at 10-11 years, a peak at 13-14 years, and a decline at 16-17 years (Sakellariou et al., 2012).

According to Sittichai and Smith (2018), there are significant differences between genders and ages in the management and conception of both traditional bullying and cyberbullying, which are closely related to peer support. Specifically in terms of age, older students tend to address these issues quickly and find a solution. In terms of gender differences, girls are more likely to ignore and hide the situation, while boys more often tend to advocate facing conflict directly. Although family support is more present in the younger groups and peer support plays a more relevant role when adolescents grow up, Lee et al. (2022) show how, even among college students, parental care and family support are relevant moderators on overlapping bullying and cyberbullying victimization.

So, we can conclude that the literature supports the important role of the immediate social context in the prevention and management of this kind of conflicts, although gender and age differences should be explored more in depth.

### ***Objectives and hypothetical model***

Considering the theoretical framework of reference, the role of family and peer support as protective factors against cyberbullying remains to be studied in greater depth. Hence, our study aims to build on previous studies by going beyond the analysis of the predictive role of family and peer support. The analysis here will encompass a wider age range, between 10 and 18 years of age, and differentiate according to gender, with an eye toward formulating more adapted measures to address this online risk.

The specific objectives, underlying the general one, are the following:

- SO1: To analyze the influence of family support and support in the use of the Internet and social networks as a preventive factor against the incidence of aggression and/or victimization by cyberbullying.
- SO2: To analyze the influence of peer group support as a preventive factor against the incidence of aggression and/or victimization by cyberbullying.
- SO3: To identify the differences in the effects as a function of gender and age.

According to what is specified in the theoretical framework, we establish the following hypotheses, visually embodied in the hypothetical model (figure 1), which will be tested through a multigroup structural equation model, considering the variables of gender and age:

- H1: Peer group and friendship support is a protective factor against becoming a victim of cyberbullying ( $\beta_1$ ).
- H2: Peer group and friendship support is a protective factor against becoming a cyberbullying aggressor ( $\beta_2$ ).
- H3: Family supervision and support in the use of the Internet and social networks is a protective factor against becoming a victim of cyberbullying ( $\beta_3$ ).

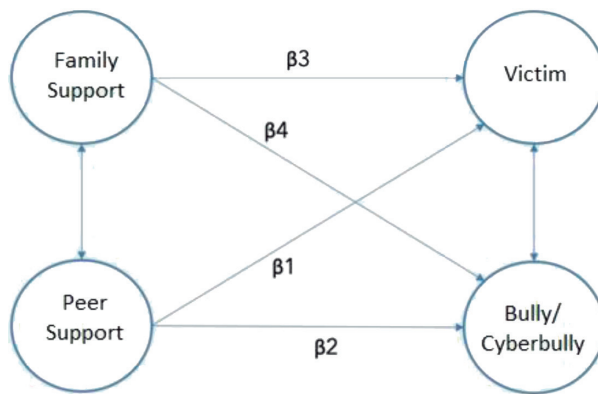


Figure 1. Hypothetical model.

- H4: Family supervision and support in the use of the Internet and social networks is a protective factor against becoming a cyberbullying aggressor ( $\beta_4$ ).
- H5: There is a correlation between family support in the use of the Internet and social networks and a positive perception of peer group support at school (C1).
- H6: There are gender differences with respect to the above effects ( $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$ ).
- H7: There are differences by age group with respect to the above effects ( $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$ ).

## Methodology

### Participants

A total of 1,554 students aged 10 to 18 years from 26 primary and secondary schools in Spain participated. A convenience sampling procedure was used, although we attempted to maintain the quotas by gender, age, private/public and urban/rural school distinction to ensure the representativeness of the population.

Regarding the characteristics of the sample, 53.1% of the participants were girls and 46.9% were boys. The mean age of the students was 14.0 years ( $SD = 1.42$ ). In terms of age distribution, 49.3% belonged to the 10- to 13-year-old group and 50.7% to the 14- to 18-year-old group. Of the participants, 21.9% were from municipalities with less than 10,000 inhabitants, 48.0% from cities with 10,000-30,000 inhabitants, and 30.1% from cities with more than 30,000 inhabitants. In the final profile of the participants, the only apparent sampling bias is in the age groups, given the lower number of older students (especially 16-18 years old) compared to the other age groups. However, the results show significant relationships and are in line with previous literature on the subject, indicating the adequacy of the sample for the purpose of this research.

### Instruments

The instruments used for data collection, validated in previous studies with the study population (see references below), were as follows.

Table 1. Variables considered in the analysis

Label	Variable
CV	Cyber victim
CV1	Someone has cursed at or insulted me on the Internet.
CV2	Someone has threatened me through messages on the internet.
CV3	Someone has spread rumors about me on the Internet.
CV4	I have been ignored or excluded from a social or chat network.
CA	Cyber aggressor
CA1	I have said swear words to someone or insulted them using text or Internet messages.
CA2	I have threatened someone through messages on the Internet.
CA3	I have spread rumors about someone on the Internet.
CA4	I have excluded or ignored someone in a social network or chat.
F	Family support
F1	My parents help me to make proper use of social networks.
F2	My parents monitor my use of new technologies.
F3	I do things with my parents on the Internet (search for information, play games, visit websites).
F4	My parents help me solve problems that happen to me on social networks.
A	Peer support (friends)
A1	We students get along well.
A2	My classmates are interested in me.
A3	I like to work in a group.
A4	My classmates help me when I need it.
A5	I feel I have friends.
A6	I express and defend my opinions without harming others.
A7	I join in the activities proposed/carried out by others.
A8	I help my classmates with what they need.

Cyberaggression and cyberbullying were assessed with the Cyberbullying Scale (ECIP-Q) Spanish version (Ortega-Ruiz et al., 2016). This instrument assesses cybervictimization and cyberaggression behaviors in adolescents and consists of 11 items for each profile answered on a 5-point Likert scale, where 0 is never and 4 is always. For this study, four items from each profile were selected because they represent the most common behaviors (see table 1) (Álvarez-García et al., 2017; Rey et al., 2018). In the reliability analysis, the cybervictimization scale showed a McDonald Omega coefficient of  $\omega = .60$ , and the cyberaggression  $\omega = .74$ .

To assess family support in Internet use, the family support scale (Ortega et al, 2012) was used to evaluate family control and support in the social network activities carried out by the family with their children. Example items include “My parents help me to make proper use of social networks” or “My parents help me to solve the problems that occur to me in social networks”. It consists of 4 items on a 5-point Likert scale, where 0 is “never” and 4 is “always”. The McDonald Omega coefficient is  $\omega = 0.82$  for this scale.

Peer group support was assessed through the Peer Social Adjustment scale (Ortega et al, 2012). This scale evaluates attitudes and behaviors in symmetrical relationships among adolescents, such as support, friendship, cooperation, assertiveness, and peer acceptance. It consists of 8 items answered on a 5-point Likert scale where 0 = never and 4 = always. The McDonald Omega coefficient is  $\omega = 0.81$  for this scale.

Our survey also included other questions created ad hoc to analyze the socio-personal features of the sample in terms of gender, age, and school grade.

The list of all these variables analyzed in the model can be seen in table 1.

**Procedure**

To make it possible for the participants to complete the questionnaires, an online platform was created, invitations were sent to the schools with the relevant information, deadlines, and objectives, and authorizations were collected from the students’ families or guardians. Each participant received a password to access the questionnaire once, which guaranteed privacy, anonymity, and confidentiality throughout the process. The project was evaluated and approved by the Research Ethics Committee of the Community of Aragon (CEICA), thus ensuring compliance with ethical standards in research involving minors.

**Data analysis**

For the analysis of the results using the IBM-SPSS (v.26) program, an initial univariate and bivariate descriptive analysis of victimization and aggression in cyberbullying was performed by comparing means with ANOVA according to the socio-personal characteristics of the sample.

In the second phase, the hypothetical model was tested by applying structural equation modeling (SEM) analysis, as this technique allows for multiple dependent variables along with the use of latent variable constructs, which are more reliable than the use of observed variables by including measurement errors. SEM also allows the possibility of reporting multiple goodness-of-fit measures. In this way, we have been able to compare the fit of certain data with the theoretical model established in the previous section, validating its fit through various indicators. Another possibility offered by SEM is to make comparisons between groups, applying the same procedure. Given that we hypothesized a relevant variability in the variables of age, gender, and age of possession of the first smartphone, we performed a multigroup analysis.

Our SEM, designed based on our previous literature review and depicted in figure 1, was tested using IBM-SPSS software and its AMOS extension (v.26). The latent and observed variables appearing in it are shown in table 1, and the relationships between them are depicted in figure 1. The estimation method chosen to test the measurement model was the asymptotic free distribution (ADF), which is recommended for scales that cannot be measured quantitatively and for which

multivariate normality cannot be assumed (Brown, 2006; Byrne, 2010). Initially, correlations were obtained between all factor scores of the variables in the subsamples of girls and boys, as well as in the subsamples of age groups: 10 to 13 years, and 14-18 years. A comparison between the subsamples was then performed by applying Fisher’s Z-transformation of the correlation coefficient.

The goodness of fit of the model was tested by the  $\chi^2$  test and the Normed Fit Index (NFI) and Comparative Fit Index (CFI) in AMOS, as well as by the Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI) indicators and their critical levels, as indicated by authors such as Byrne (2010) and Vandenberg (2006). We applied multigroup analysis (configural model, therefore, to test for configural invariance, Byrne, 2010, p. 218) to verify the hypothesis that respondents of different genders and different age groups would show significant differences in the effects analyzed.

**Results**

Firstly, the descriptive results by gender and age (table 2) show a significantly greater rate of victimization and likelihood of acting as aggressors among boys than among girls, except in the cases of receiving (CV3) or spreading rumors (CA3) and of excluding or ignoring someone in a chat room (CA4), where the percentages are similar between boys and girls. Insults represent the most common type of aggression suffered and perpetuated by both boys and girls, with 11.8% of girls and 21.3% of boys having been the targets of insults through social networks and 6.7% of girls and 16.2% of boys having insulted others online. The only significant differences by age were found in rumor victimization, of which there is a higher rate (11.1%) among the 14-18 age group.

Meanwhile, half of those surveyed reporting getting family support and supervision in the use of the Internet and social networks on a regular basis. There were hardly any differences by gender, except in receiving help to solve problems on the Internet (more common in girls, at 55.3%). As could be hypothesized, there is much more family support in the 10 to 13 age group in all the behaviors analyzed, especially when it comes to monitoring their use of social networks, something which occurs with 71.9% of children under 14 years of age but only with 39.2% of those aged 14 and over (table 3).

Finally, there were hardly any differences as a function of age in the perception of peer support, although

**Table 2.** Rate of cyberbullying victimization and aggression by gender and age group

Gender (%)	CV1	CV2	CV3	CV4	CA1	CA2	CA3	CA4
Girls	11.8***	3.2***	7.5	8.8**	6.7***	2.0***	3.2	6.2
Boys	21.3***	10.3***	9.6	13.2**	16.2***	6.5***	4.7	7.5
Age (%)	CV1	CV2	CV3	CV4	CA1	CA2	CA3	CA4
10-13	16.9	5.2	5.9**	12.7*	9.9	3.1	3.4	7.1
14-18	15.4	7.8	11.1**	8.9*	12.3	5.1	4.4	6.4

n. =1,554.

**Table 3.** Percentage of participants who report having regular parental support and support for Internet use by gender and age group

Gender (%)	F1	F2	F3	F4
Girls	54.9	55.9	57.0*	55.3***
Boys	51.7	56.4	51.5*	44.7***
Age (%)	F1	F2	F3	F4
10-13	67.5***	71.9***	62.7***	59.9***
14-18	38.3***	39.2***	45.5***	40.2***

n = 1,554.

a slightly higher level of companionship was observed in the 10-13 group (table 4).

Before testing the structural equation models, we analyzed the correlations between the model variables by gender and age. Significant correlations were found in all cases, with the highest coefficient in all groups found between being a cyber-victim and being a cyber-aggressor. Both by gender and age, there is a positive and significant correlation between family support and the peer group. Likewise, it is established that peer support has higher correlation coefficients (significant and negative) than family support with being a cyber-victim and cyber-aggressor in all the groups analyzed. This relation is relevant both in the group of girls and in the younger age group (table 5; table 6).

As different results were observed according to gender and age, we performed a multigroup comparison of structural models based on these variables to see which data best fit the hypothesized model. We tested 11 models for each variable and compared them with each other. Since the differences between CMIN/DF did not provide significant results (Byrne, 2010), we used the Akaike's Information Criterion (AIC) as a suitable indicator for comparison between models (Hu & Bentler, 1995). Starting from the most restrictive model ("structural weights"), we modified a series of restrictions on the effects. Thus, by gender, the model with the most optimal fit was Model C4 (Equal effects on  $\beta_2$ ;  $\beta_3$ ;  $\beta_4$ , CMIN/DF = 4.075;  $p < 0.0001$ ; GFI = 0.915; RMSEA = 0.045; AIC = 1526.856) (table 7). In the multigroup comparison of the variable "age group", the model that presented the best fit was Model C3 (Equal effects on  $\beta_1$  and  $\beta_2$ ; CMIN/DF = 4.372;  $p < 0.0001$ ; GFI = 0.911; RMSEA = 0.047; AIC = 1622.644) (table 8).

An analysis of the results of the multigroup structural equation models by gender (figure 2) and age (figure 3) indicates that the contextual elements (family and peer support) are important protective factors against cyberbullying victimization or aggression. In all cases there is a negative and highly significant re-

lationship between the positive perception of peer group and family support and becoming a victim or aggressor of cyberbullying, except for the effect of family support in the 14-18-year-old group.

Regarding the results by gender, the support of key peers plays a more relevant role in preventing girls from becoming victims ( $\beta_1 = -.329^{***}$ ). The role of family support is also more important in preventing girls both from becoming victims ( $\beta_3 = -.114^{***}$ ) and from becoming aggressors ( $\beta_4 = -.147^{***}$ ), although in the multigroup comparison significant differences by gender were only evident in the former case.

In terms of age differences, although the family does not play a preventive role in the 14-18 age group, peer support does, and in a very relevant way, even more so than in the 10-13 age group ( $\beta_1 = -.250^{***}$ ;  $\beta_2 = -.193^{***}$ ). As specified above, for the 10-13 age group, the family is an important factor of prevention in victimization ( $\beta_3 = -.137^{***}$ ) as in aggression ( $\beta_4 = -.175^{***}$ ) by cyberbullying. In all cases, there is a positive correlation between supervision and family support and perception of peer support.

## Discussion and conclusions

The aim of this study was to analyze the predictive role of family and peer support in cyberbullying broken down by age and gender so that more tailored measures can be formulated to address this online risk. Our sample showed a greater rate of cybervictimization and presence of cyberaggressors in boys, confirming some of the previous studies (Ang, 2015; Bae, 2021; Sorrentino et al., 2019a; Wong et al., 2018), but no highly significant differences by age were apparent with the exception of the rate of rumor victimization in the 14-18 age group. This may be related to the findings of Cebollero-Salinas et al. (2022) in that, from the age of 15 years onwards, cyber-gossip accounts for cyber-victimization to a greater extent.

Thus, in view of the results, we agree with Smahel et al. (2020) that family support is higher in early adolescents (10-13 years) and is higher in girls, specifically in that parents are more likely to help girls solve problems on the Internet. Responding to the stated objective, our study finds that contextual elements (family and peer support) are important protective factors for preventing both cyberaggression and cyber-victimization behavior, confirming the hypotheses in this sense and corroborating previous studies (Baldry et al., 2019; Kowalski et al., 2019; Marengo et al., 2021; Martín-Criado et al., 2021; Martín-Criado et al.; Zych

**Table 4.** Percentage of children and adolescents reporting good peer support by gender and age group

Gender (average)	A1	A2	A3	A4	A5	A6	A7	A8
Girls	3.09	2.64*	2.84	2.98	3.46	3.12*	2.93	3.31**
Boys	3.13	2.75*	2.86	3.03	3.41	3.02*	2.90	3.20**
Age (average)	A1	A2	A3	A4	A5	A6	A7	A8
10-13	3.15	2.77**	2.97***	3.07**	3.48*	3.11	2.95	3.30
14-18	3.08	2.62**	2.74***	2.94**	3.40*	3.04	2.88	3.23

n = 1,554.

**Table 5.** Correlation coefficients between SEM model variables by gender

	Girls			
	1	2	3	4
Family support		.229***	-.224***	-.209***
2. Peer support (friends)	.202***		-.361***	-.253***
3. Cyber victim	-.082*	-.171***		.709***
4. Cyber aggressor	-.103***	-.178***	.902***	

\* p < .05; \*\*\* p < .0001.

**Table 6.** Correlation coefficients between SEM model variables by age group

	10-13			
	1	2	3	4
Family support		.245***	-.180***	-.212***
2. Peer support (friends)	.163***		-.273***	-.225***
3. Cyber victim	-.060*	-.220***		.824***
4. Cyber aggressor	-.037*	-.177***	.824***	

\* p < .05; \*\*\* p < .0001.

et al., 2019). However, the two factors exert differing degrees of influence depending on gender and age. Likewise, according to the results, it is essential for girls to have good peer support to prevent cybervictimization.

There is no doubt that the Internet offers more possibilities for socialization and provides tools to cre-

ate, adapt and modify content very easily. This means that some of the actions carried out on the Internet, such as uploading photos and videos, and disseminating information, can be occasions for both positive actions and some problems, such as jokes in bad taste and the generation of memes, which can trigger anger, comparisons, and envy. Therefore, peer support can be key in these situations. Given that girls more frequently use the Internet to start and maintain friendships through social networks (Álvarez-García et al., 2017; Twenge & Martin, 2020), this may be a key factor in both obtaining the support they need to avoid being cybervictimized and to avoid cyberaggression behaviors, which tend to be more indirect and relational (Martínez-Monteaugudo et al., 2019).

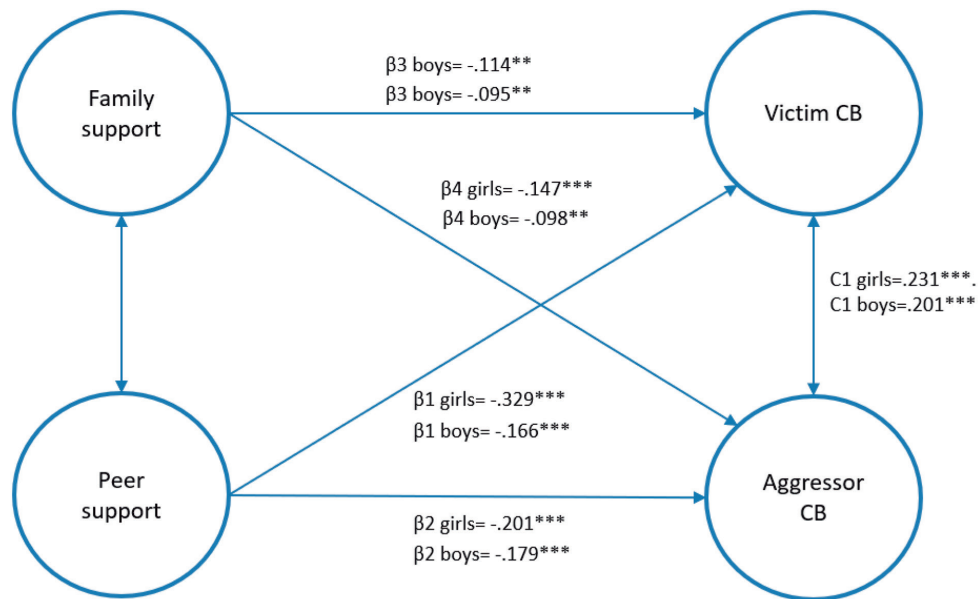
The results indicate that family support has a direct regulatory effect on cyberaggression and cybervictimization in both sexes, but especially in girls. Previous studies indicate that family support is also essential in adolescent girls with respect to other online risks, such as problematic Internet use (Cebollero-Salinas et al., 2021), which raises the question of why this factor does not seem to influence in the behavior of boys, an issue which requires further research. This could be related to the fact that cyberbullying is often related to online games such as sports and action games (Li & Pustaka, 2017) and boys tend to be more regular participants in this domain (Álvarez-García et al., 2017;

**Table 7.** Structural equation model fit indices by gender

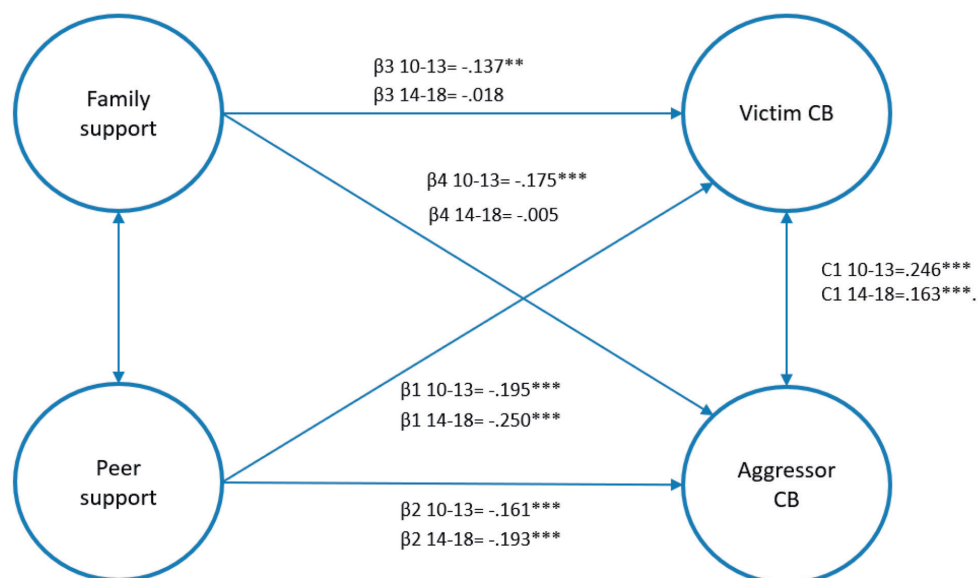
Model	Description of the model	CMIN	DF	P	CMIN/DF	GFI	RMSEA	AIC
A	Measurement weights	1438.392	344	<.0001	4.181	.909	.045	1590.392
B	Structural weights	1445.118	348	<.0001	4.153	.908	.045	1589.118
C1	Model 1 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_3$ ; $\beta_4$ )	1361.424	332	<.0001	4.101	.914	.045	1537.424
C2	Model 2 (Equal $\beta_3$ ; $\beta_4$ )	1348.334	330	<.0001	4.086	.915	.045	1528.334
C3	Model 3 (Equal $\beta_1$ ; $\beta_2$ )	1357.614	330	<.0001	4.114	.914	.045	1537.614
<b>C4</b>	<b>Model 4 (Equal <math>\beta_2</math>; <math>\beta_3</math>; <math>\beta_4</math>)</b>	<b>1348.856</b>	<b>331</b>	<b>&lt;.0001</b>	<b>4.075</b>	<b>.915</b>	<b>.045</b>	<b>1526.856</b>
C5	Model 5 (Equal $\beta_1$ ; $\beta_3$ ; $\beta_4$ )	1359.364	331	<.0001	4.107	.914	.045	1537.364
C6	Model 6 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_4$ )	1358.302	331	<.0001	4.104	.914	.045	1536.302
C7	Model 7 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_3$ )	1361.269	331	<.0001	4.113	.914	.045	1539.269
C8	Model 8 (Equal $\beta_1$ ; $\beta_3$ )	1359.355	330	<.0001	4.119	.914	.045	1539.355
C9	Model 9 (Equal $\beta_2$ ; $\beta_4$ )	1347.745	330	<.0001	4.084	.915	.045	1527.745
C10	Model 10 (Equal $\beta_1$ ; $\beta_4$ )	1356.768	330	<.0001	4.111	.915	.045	1536.768
C11	Model 11 (Equal $\beta_2$ ; $\beta_3$ )	1348.854	330	<.0001	4.087	.915	.045	1528.854

**Table 8.** Structural equation model fit indices by age group

Model	Model description	CMIN	DF	P	CMIN/DF	GFI	RMSEA	AIC
A	Measurement weights	1500.266	344	<.0001	4.361	.908	.047	1652.266
B	Structural weights	1507.233	348	<.0001	4.331	.908	.046	1651.233
C1	Model 1 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_3$ ; $\beta_4$ )	1449.022	332	<.0001	4.365	.911	.047	1625.022
C2	Model 2 (Equal $\beta_3$ ; $\beta_4$ )	1445.845	330	<.0001	4.381	.911	.047	1625.845
<b>C3</b>	<b>Model 3 (Equal <math>\beta_1</math>; <math>\beta_2</math>)</b>	<b>1442.644</b>	<b>330</b>	<b>&lt;.0001</b>	<b>4.372</b>	<b>.911</b>	<b>.047</b>	<b>1622.644</b>
C4	Model 4 (Equal $\beta_2$ ; $\beta_3$ ; $\beta_4$ )	1447.426	331	<.0001	4.373	.911	.047	1625.426
C5	Model 5 (Equal $\beta_1$ ; $\beta_3$ ; $\beta_4$ )	1448.955	331	<.0001	4.378	.911	.047	1626.955
C6	Model 6 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_4$ )	1448.913	331	<.0001	4.377	.911	.047	1626.913
C7	Model 7 (Equal $\beta_1$ ; $\beta_2$ ; $\beta_3$ )	1445.724	331	<.0001	4.368	.911	.047	1623.724
C8	Model 8 (Equal $\beta_1$ ; $\beta_3$ )	1445.705	330	<.0001	4.381	.911	.047	1625.705
C9	Model 9 (Equal $\beta_2$ ; $\beta_4$ )	1447.422	330	<.0001	4.386	.911	.047	1627.422
C10	Model 10 (Equal $\beta_1$ ; $\beta_4$ )	1448.823	330	<.0001	4.390	.911	.047	1628.823
C11	Model 11 (Equal $\beta_2$ ; $\beta_3$ )	1443.447	330	<.0001	4.374	.912	.047	1623.447



**Figure 2.** Structural model results. Standardized coefficients and significance level by gender (Model C4 Equal  $\beta_2$ ,  $\beta_3$  and  $\beta_4$ ). n.girls = 825; n.boys = 729; GFI = .92; CFI = .91; RMSEA = .045.



**Figure 3.** Structural model results. Standardized coefficients and significance level by age group (Model C3 Equal  $\beta_1$  and  $\beta_2$ ). n.10-13=766; n.14-18=788; GFI = .92; CFI = .90; RMSEA = .047.

Twenge & Martin, 2020). In this case, parents may assume that it is not necessary to accompany their children for them to maintain good social behaviors.

Although the family does not play a preventive role in the 14-18 age group, peer support does, and in a very relevant way. These results seem reasonable if we consider that in adolescence there is a great need to belong to a group and to have a sense of identity (Allen and Loeb, 2015). Therefore, in the early phase parents are the important source of social support, and then peers start to take on a more important role as adolescence evolves (Furman and Buhrmester, 1992), which may lead to an increased risk of suffering negative consequences during socialization in the Internet, as well as of engaging in cyberaggression for reasons such

as jealousy and seeking approval or revenge (Varjas et al., 2010).

These results need to be evaluated considering the limitations of the study. On the one hand, although the sample is relatively large, it belongs to a single national context, Spain, so it would be prudent to repeat this study in other cultures, as well as to carry out longitudinal studies to explore the causal nature of the study variables. Finally, while only self-report instruments were used here, in future studies they should be complemented with qualitative assessments to account for possible social desirability effects.

Despite these limitations, our findings can be considered significant, especially with regard to the differences found between gender and age, and they have



important educational implications. Specifically, the results highlight the relevance of family accompaniment of children at an early age to promote responsible use of technology (Martín-Criado et al., 2021), with a special emphasis on online activities and attempts to ensure that such supervision and support do not diminish as children age, regardless of gender.

Likewise, the results of this study confirm, together with other studies (Marengo et al., 2021; Zych et al., 2019), that the prevention of cyberbullying is related to the support of close friends and peers. Given this fact, the idea of the need to implement school-based prevention plans against cyberbullying is reinforced, as would be the case of the *Asegúrate* program (Del Rey et al., 2019), which involves cooperative learning among students and which, regardless of age, could be applied at various educational levels.

Interventions by schools in the form of prevention and raising awareness of cyberbullying can make a big difference in the number and severity of cases, especially for students whose families do not have sufficient training to work with children and adolescents on the dangers and implications of bullying through ICTs. Such programs are especially relevant in ensuring that the responses of schools and families are coordinated (Bautista and Vicente, 2020).

To date, anti-cyberbullying measures have only been modestly implemented, and there may be social influences yet to be determined (Pennell et al., 2020). Hopefully, the findings of this study can help government organizations to formulate policies to overcome cyberbullying, as more guidance and support are needed to help school principals (Corcoran & Mc Guckin, 2014) and the other professionals involved (Chalmers et al., 2016). A high level of social support from the environment surrounding adolescents, especially from family and close friends, can prevent young people from indulging in such negative behavior, which involves exerting social control regardless of their gender but remaining aware of the relevance of gender differences.

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