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## The Influence of School and Family Environment on Adolescent Victims of Cyberbullying

**Influencia del clima escolar y familiar en adolescentes, víctimas de ciberacoso**

**Jessica Ortega-Barón**

Research Associate in the Social Psychology Department at the University of Valencia (Spain)  
(jessica.ortega@uv.es) (<http://orcid.org/0000-0002-8822-5906>)

**Dr. Sofía Buelga**

Full Professor in the Social Psychology Department at the University of Valencia (Spain) (sofia.buelga@uv.es) (<https://orcid.org/0000-0001-7434-4752>)

**Dr. María-Jesús Cava**

Full Professor in the Social Psychology Department at the University of Valencia (Spain) (maria.j.cava@uv.es) (<https://orcid.org/0000-0001-7737-9424>)

### Abstract

Cyberbullying is a phenomenon of growing social concern that affects an increasing number of children and adolescents from all the developed countries. Although there is a large body of literature on the relationships between school bullying and the family and school contexts, few studies have examined the influence of these social environments on the problem of cyberbullying. Using a quantitative methodology, the main objective of this study was to analyse the influence of the school and family contexts on victims of cyberbullying. The sample consisted of 1,062 Spanish adolescents (51.5% boys and 48.5% girls) from 11 to 18 years old ( $M=14.5$ ;  $SD=1.62$ ). Three comparison groups were formed: severe cyberbullying victims, moderate cyberbullying victims, and non-victims of cyberbullying. The results of the analysis of variance indicated that severe cyberbullying victims, compared to non-victims, scored significantly higher on family conflict and obtained lower scores on the remaining family (family self-concept, cohesion and expressiveness) and school (involvement, affiliation, and teacher support) variables considered in the study. Regression analyses revealed that academic and family self-concept and some dimensions of family and school climate predict cyber-victimization in adolescence. These new results point to the importance of including the family and the school in cyberbullying prevention programs.

### Resumen

El ciberacoso es un fenómeno de creciente preocupación social que afecta cada vez más a niños y adolescentes de todos los países desarrollados. A diferencia de la considerable literatura que hay sobre las relaciones entre el acoso escolar y el contexto familiar y escolar, todavía hay pocos trabajos sobre la influencia de estos entornos sociales en el problema del ciberacoso. Mediante una metodología cuantitativa, el objetivo principal del presente estudio fue analizar la influencia del contexto escolar y familiar en víctimas de ciberacoso. La muestra estuvo formada por 1.062 adolescentes (51,5% chicos y 48,5% chicas), de edades comprendidas entre los 12 y los 18 años ( $M=14,5$ ;  $DT=1,62$ ). Se establecieron tres grupos de contraste: cibervíctimas severas, cibervíctimas moderadas y no víctimas de ciberacoso. Los resultados del análisis de varianza indicaron que las cibervíctimas severas en comparación con las no víctimas puntuaban significativamente más alto en conflicto familiar y obtienen puntuaciones más bajas en el resto de variables familiares



(autoestima familiar, cohesión y expresividad), y variables escolares (implicación, afiliación y ayuda al profesor), consideradas en el estudio. Los análisis de regresión revelaron que la autoestima académica y familiar y algunas dimensiones del clima familiar y escolar predicen la cibervictimización en la adolescencia. Estos novedosos resultados muestran la importancia de incluir a la familia y a la escuela en los programas de prevención del ciberacoso.

## Keywords / Palabras clave

Cyberbullying, adolescence, victims, Internet, mobile phone, school, family, self-esteem.  
Ciberacoso, adolescencia, víctimas, Internet, teléfono móvil, escuela, familia, autoestima.

## 1. Introduction and state of the matter

Greater access and use of new information and communication technologies (ICT) by adolescents involves new dangers (Durán & Martínez, 2015; Kowalski, Giumetti, Schroeder, & Lattanner, 2014), including cyberbullying. This type of peer bullying has been defined as an intentional and aggressive behaviour that is repeated frequently over a period of time through the use, by an individual or group, of electronic devices against a victim who cannot easily defend him/herself (Smith & al., 2008: 376).

Studies indicate that adolescent bullying through ICT has increased considerably in recent years (Fernández, Peñalva, & Irazabal, 2015). Thus, while Ybarra and Mitchell (2004) point to a prevalence of cyberbullying victims of 6.5%, almost ten years later Navarro, Serna, Martínez and Ruiz-Oliva (2013) find an incidence of adolescent cyber-victimization of 24.6%. For some authors, this increase in the prevalence of cybernetic bullying is due to the appearance and rapid expansion of new electronic devices, such as the smartphone, whose daily use is growing in the young population (Kowalski & al., 2014).

In addition, studies on the prevalence of cyberbullying according to sex are not conclusive. Some authors find a greater percentage of victims among girls (Beckman, Hagquist, & Hellström, 2013; Kowalski & al., 2014), while other authors find more victims among boys (Durán & Martínez, 2015), and still others observe no differences between the sexes (Katzner, Fetchenhauer, & Belschak, 2009). Regarding age, studies seem to agree that there are more victims of cyberbullying in lower secondary education (between 12 and 14 years old), with a decline in cyberbullying victimization in upper secondary education (between 14 and 16 years old) (Buelga, Cava, & Musitu, 2010).

Compared to the large body of literature on traditional school bullying (Pereda, Guilera, & Abad, 2014; Postigo, González, Montoya, & Ordóñez, 2013), few studies have examined other questions, such as the relationships between the school and family variables and cyberbullying. In the school setting, Tokunaga (2010) concludes that cyberbullying victimization causes the victim to experience a decline in academic achievement, to have less involvement in school tasks, experience attention problems and learning difficulties and greater school absenteeism. In addition to these academic problems, cyberbullying victims have a more negative perception of school, and they do not believe the teachers are able to help them solve their bullying problem. (Buelga, Ortega-Barón, Iranzo, & Torralba, 2014; Gradinger, Strohmeier, & Spiel, 2010).

This lack of confidence and support by adults also extends to their peers. Thus, Odaci and Kalhan (2010) show that cyberbullying victims have relationship difficulties with their classmates and experience greater isolation and social rejection from their peers, which contributes to maintaining the cyberbullying behaviour. Along these lines, Navarro, Ruiz-Oliva, Larrañaga and Yubero (2015) observe that children and adolescents with difficulties in their interpersonal relationships and poor social skills are more vulnerable to being cyberbullied by their peers. Thus, as occurs in traditional school bullying, there is a retroactive cycle involving risk factors and cyber-victimization continuity (Cava, Musitu, & Murgui, 2007; Kowalski & al., 2014).

Regarding the relationship between the family environment and cyberbullying, few studies have investigated this topic (D'Auria, 2014). Some authors suggest that there is a close link between a



negative family environment and a reduction in adolescents' social and individual resources, making them more vulnerable to being mistreated and intimidated by their peers (Lereya, Samara, & Wolke 2013). According to Gomes-Franco and Sendín (2014), deteriorated or dysfunctional family links cause children to spend more time connected to the Internet in an attempt to replace family interactions or protest against them. Moreover, various studies point out that the exposure to situations of marital or family conflict are related to a greater tendency in the children toward hostility, antisocial behaviour and school violence (Buelga, Iranzo, Cava, & Torralba, 2015). By contrast, parental cohesion and social support are a favourable resource in the adolescent's social adjustment and development of positive relationships with peers, making it possible to avoid being the target of cyberbullying (Navarro & al., 2015).

From this perspective, taking into account that cyberbullying is a relatively recent and rapidly increasing problem in children and adolescents in all the developed countries (Kowalski & al., 2014), and that few studies have analysed, specifically and together, the relationships between cyberbullying and family and school variables (Tairiol, 2010), the objectives of the present study were: 1) To determine to what degree cyberbullying and the family and school variables are related to each other, also observing whether there are significant differences in the study variables based on sex; 2) To analyse the existence of possible differences between the groups of adolescents victimized (moderate and severe) and not victimized through cyberbullying on the variables of academic self-concept, perception of the school environment (teacher support, affiliation and involvement), family self-concept, and the family environment (family cohesion, expressiveness and conflict); 3) To determine the predictive value of the school and family variables in cyberbullying.

## 2. Materials and methodology

### 2.1. Participants

The participants were selected through stratified sampling by clusters. The sampling units were the Secondary Education Public Schools in the Valencian Autonomous Community. The size of the sample of adolescents corresponding to the size of the group of students in Compulsory Lower Secondary Education (ESO) and Upper Secondary in the Valencian Community, with a sampling error of  $\pm 3\%$ , a confidence level of 95%, and  $p=q=0,5$ , ( $N=190.773$ ), was estimated at 1,061 students.

A total of 1,068 adolescents participated in this study, of whom six were excluded for responding systematically in the same way to the scales. Finally, the sample was composed of a total of 1,062 adolescents, 547 boys (51.5%) and 515 girls (48.5%) between 12 and 18 years old ( $M=14,5$ ;  $DT=1,62$ ), who were students at four public secondary schools in the provinces of Valencia and Alicante. In addition, 44.8% of the participants were enrolled in the first cycle of ESO (lower secondary) ( $n=475$ ), 39.5% in the second cycle of ESO (upper secondary) ( $n=420$ ), and 15.7% in Pre-university studies ( $n=167$ ).

### 2.2. Instruments

- Adolescent victimization through mobile phone and Internet scale (CYBVIC; Buelga, Cava, & Musitu, 2012). This scale consists of 18 items responded to on a Likert-type scale from 1 to 4 (never, seldom, often, and always). The items measure the bullying experienced through the mobile phone and the Internet in the past 12 months. Mobile phone victimization contains 8 items (for example, «Someone called me and hung up»), and Internet victimization is evaluated with the previous 8 items and 2 more items related to identity theft (for example, «Someone went into my private accounts, and I couldn't do anything about it»). In our study, the Cronbach's  $\alpha$  reliability coefficient for the scale was 0.89.



- Intensity of mobile phone and Internet bullying scale (Buelga, Cava, & Musitu, 2010). The subjects use a 6-point response scale (never, only once, 2 or 3 times, once or twice a month, once or twice a week, and every day or almost every day) to indicate the severity with which they have been cyberbullied in the past year. The last four response options make it possible to measure moderate bullying (less than one aggression per week) and severe bullying (more than one aggression per week) (Smith & al., 2008).
- Form 5 Self-concept scale (AF-5; García & Musitu, 1999). For the purposes of the present study, the academic self-concept and family self-concept subscales were used to evaluate the subjects' responses in a range from 1 (Completely disagree) to 99 (Completely agree). The academic self-concept subscale is composed of six items that evaluate the adolescent's self-perception of his/her feeling of competence in the school setting (for example, «My schoolwork is good»). The family self-concept subscale contains 6 items that evaluate the adolescent's self-perception of his/her feeling of value in the family setting (for example, «I feel loved by my parents»). The Cronbach's  $\alpha$  reliability coefficient obtained in this study was 0.89 for the academic self-concept subscale and 0.77 for the family self-concept subscale.
- Classroom Environment Scale (CES; Spanish adaptation by Fernández-Ballesteros & Sierra, 1989). The scale is composed of 30 true-false items that evaluate the adolescent's perception of the quality of the school environment. It consists of three subscales: perception of the teacher's support (10 items, for example, «Teachers take a personal interest in students »); affiliation: friendship and help among students (10 items, for example, « Students in this school make a lot of friends »); and involvement in schoolwork (10 items, for example, «The students take a lot of interest in what they do in class »). The Cronbach's  $\alpha$  reliability coefficient in this study was 0.64 for the involvement and affiliation subscales, and 0.75 for the teacher support subscale.
- Family Environment Scale (FES; Spanish adaptation by Fernández-Ballesteros & Sierra, 1989). This scale is composed of 27 true-false items that evaluate the adolescent's perception of the quality of the family environment. It has 3 subscales: family cohesion (9 items, for example, «In my family there is a strong feeling of togetherness »); family expressiveness (9 items, for example, «We are usually careful about what we say »); and family conflict (9 items, for example, «In my family, we sometimes hit each other»). The Cronbach's  $\alpha$  reliability coefficient in this study was 0.84 for the dimension of family cohesion, 0.79 for the dimension of family expressiveness, and 0.86 for the dimension of family conflict.

### 2.3. Design

The study design was non-experimental; specifically, we used a correlational cross-sectional design.

### 2.4. Procedure

Once the corresponding permission had been obtained from the selected schools, an informative seminar was held for the teachers and administration to explain the research objectives and request the parent authorizations. Later, previously trained researchers administered the instruments to the adolescents during the school day, informing them at all times that their participation in the study was voluntary and anonymous. Their privacy was guaranteed, reducing any possible social desirability effects.

### 3. Results

The data were analysed with the SPSS statistical package (version 20). First, the subjects' scores on the Scale of intensity of mobile phone and Internet bullying were used to classify the adolescents in three comparison groups. According to the criteria by Smith and colleagues (2008), the subjects who score «2 or 3 times» and «once or twice a month» were distributed in the group



of moderate victims (less than one aggression per week), while those adolescents who scored «once or twice a week» and «every day or almost every day» were classified in the group of severe victims (more than one aggression per week). The subjects who scored «never» were assigned to the group of non-victims. The subjects who scored «only once» were excluded from the comparison groups because there had been no repetition of the cyberbullying.

Once the comparison groups had been established, first, a Pearson correlation analysis was carried out to determine the relations between cyberbullying and the school and family variables being studied, and a Student's t test was performed to find out whether there are differences in these variables based on sex. Second, a one-factor ANOVA was performed to discover whether there were significant differences among the three comparison groups on the school environment variables (teacher support, affiliation and involvement) and academic self-concept, and on the family environment variables (family cohesion and family conflict) and family self-concept.

Third, a multiple linear regression analysis was performed of the predictive value of the school and family variables in the victimization through the mobile phone and Internet.

### 3.1. Frequency of cyberbullying victimization based on its intensity

The results of the study indicate, first, that 72.6% (n=731) of the adolescents have never been victimized through the mobile phone or the Internet, while 27.4% (n=276) have been victims of cyberbullying in the past year. Of these victims, 20.5% (n=218) belong to the group of moderate cyberbullying victims and 5.5% to the group of severe cyberbullying victims (n=58).

### 3.2. Relationships between cyberbullying and school environment, family environment and self-concept

The Pearson correlation analysis reveals statistically significant correlations between cyberbullying and all of the variables analysed in the study (Table 1). Cyberbullying correlates negatively at  $p < 0.01$  with all the school and family variables, and positively with family conflict.

Table 1. Pearson correlations, means and standard deviations by sex and results of Student's t test									
Variables	1	2	3	4	5	6	7	8	9
1. CB	-								
2. AS	0,20**	-							
3. IMP	0,15**	0,15**	-						
4. AFI	0,16**	0,12**	0,33**	-					
5. TS	0,12**	0,18**	0,33**	0,26**	-				
6. FS	0,21**	0,45**	0,17**	0,19**	0,25**	-			
7. FCo	0,19**	0,28**	0,23**	0,20**	0,21**	0,59**	-		
8. FE	0,13**	0,22**	0,14**	0,10**	0,10**	0,37**	0,41**	-	
9. FC	0,12**	-0,18**	0,11**	0,17**	0,13**	-0,42**	0,50**	0,14**	-
M Boys	1,20	59,30	1,46	1,70	1,57	82,17	1,79	1,55	1,33
SD Boys	0,28	21,51	0,20	1,78	0,22	16,54	0,21	0,20	0,20
M Girls	1,66	65,82	1,46	1,70	1,60	83,96	1,79	1,58	1,32
SD Girls	0,32	20,89	0,21	1,80	0,20	16,53	0,22	0,20	0,19
T	-	-4,87***	0,52	-	-	-1,71	0,54	-	0,70



**Table 1. Pearson correlations, means and standard deviations by sex and results of Student's t test**

Variables	1	2	3	4	5	6	7	8	9
	1,79			0,02	1,98*			2,00*	

Note: CB=Cyberbullying; AS=Academic self-concept; IMP=Involvement; AFI=Affiliation; TS=Teacher support; FS=Family self-concept; FCo=Family cohesion; FE=Family expressiveness; FC=Family conflict; M=Means boys/girls; SD=Standard deviation; T=Student t test

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001.

As Table 1 also shows, there are no statistically significant differences between the sexes in the cyberbullying variables, school involvement, affiliation, family self-concept, family cohesion and family conflict. By contrast, there are statistically significant differences between the sexes for academic self-concept ( $t=-4,87$ ,  $p<0,001$ ), teacher support ( $t=-1,98$ ,  $p<0,05$ ), and family expressiveness ( $t=-2,00$ ,  $p<0,05$ ).

### 3.3. Differences in the perception of the school environment, family environment and self-concept based on the intensity of the cyberbullying victimization

In addition, the analysis of variance reveals the existence of statistically significant differences between the groups of severe and moderate cyberbullying victims compared to the non-victimized group of adolescents on all the school and family variables analysed in the study.

Thus, Table 2 shows that on the academic self-concept variable,  $F(2, 1007)=9,27$ ,  $p<0,001$ , the severely victimized adolescents score significantly lower than the non-victimized adolescents, with differences between this latter group and the moderate cyberbullying victims, but not between the two cyberbullying victim groups. In the same way, statistically significant differences are observed in the three school environment dimensions, so that the severe cyberbullying victims, compared to the non-victimized adolescents, score significantly lower on involvement, affiliation and teacher support.

**Table 2. Differences between the groups (non-cyberbullying victims, moderate cyberbullying victims and severe cyberbullying victims) on the variables of school environment, academic self-concept, family environment and family self-concept**

	Non cyberbullying victims		Moderate cyberbullying victims		Severe cyberbullying victims		F
	M	(SD)	M	(SD)	M	(SD)	
<b>School variables</b>							
Academic self-concept	64,03 <sup>b</sup>	(21,39)	59,44 <sup>a</sup>	(21,14)	53,55 <sup>a</sup>	(19,72)	9,27***
<b>School environment</b>							
Involvement	1,48 <sup>b</sup>	(0,21)	1,42	(0,19)	1,41 <sup>a</sup>	(0,18)	10,56***
Affiliation	1,72 <sup>b</sup>	(0,18)	1,67 <sup>a</sup>	(0,17)	1,65 <sup>a</sup>	(0,19)	7,47**
Teacher support	1,60 <sup>b</sup>	(0,21)	1,56	(0,22)	1,52 <sup>a</sup>	(0,20)	9,75***
<b>Family variables</b>							
Family self-concept	84,36 <sup>b</sup>	(15,46)	79,56	(18,23)	79,31 <sup>a</sup>	(21,79)	8,75***
<b>Family environment</b>							
Family cohesion	1,80 <sup>b</sup>	(0,20)	1,76	(0,24)	1,75 <sup>a</sup>	(0,24)	5,58**
Family expressiveness	1,58 <sup>b</sup>	(0,20)	1,55	(0,19)	1,53 <sup>a</sup>	(0,23)	4,91**
Family conflict	1,31 <sup>a</sup>	(0,19)	1,33	(0,21)	1,35 <sup>b</sup>	(0,19)	3,59*

Note: M=Mean; SD=Standard deviation; Fisher-Snedecor  $F=F$ ; # Bonferroni Test.

a<b<c.; \*p<0,05; \*\*p<0,01; \*\*\*p<0,001.



In the case of family self-concept,  $F(2, 1007) = 8,75$ ,  $p < 0,001$ , and the family environment dimensions (cohesion, family expressiveness), the results indicate that the severely victimized adolescents score significantly lower than the group of adolescents who are not victimized through ICT. Regarding the family conflict variable, the results indicate that the severe victims of cyberbullying obtain significantly higher scores than the non-victims. There are no statistically significant differences between the moderate cyberbullying victims and the non-victimized adolescents or the severe cyberbullying victims on any of the family variables analysed.

### 3.4. Predictive value of the school and family variables in cyberbullying

Finally, the regression analysis confirms the predictive value of the school and family variables in cyberbullying. As Table 3 shows, the school and family variables explain 6.2% and 9.7%, respectively, of victimization through the mobile phone and Internet.

Table 3. Multiple linear regression analysis using cyberbullying as the criterion variable				
Predictor variables	R2 Corrected	F	$\beta$	p
<b>School context</b>	0,062	12,58		
Academic self-concept			-0,170	<0,001
Teacher support			-0,081	0,017
Feeling of affiliation			-0,103	0,002
Involvement in schoolwork			-0,031	0,346
<b>Family context</b>	0,097	31,34		
Family self-concept			-0,135	<0,001
Family cohesion			-0,235	<0,001
Family expressiveness			-0,041	0,239
Family conflict			0,114	<0,001

Note: R<sup>2</sup>=Squared multiple correlation; Fisher-Snedecor F=F;  $\beta$ =Beta;  $p = \alpha = 0,05$ .

Specifically, the table shows that academic self-concept ( $\beta = -0,170$ ;  $p < 0,001$ ), teacher support ( $\beta = -0,081$ ;  $p = 0,017$ ), and the feeling of affiliation ( $\beta = -0,103$ ;  $p = 0,002$ ) are some of the statistically significant explanatory variables, while the involvement in schoolwork variable was not significant. Regarding the family variables with a higher predictive value than the school variables, the results show that, with the exception of the family expressiveness dimension, the variables family self-concept ( $\beta = -0,135$ ;  $p < 0,001$ ), family cohesion ( $\beta = -0,235$ ;  $p < 0,001$ ), and family conflict ( $\beta = 0,114$ ;  $p < 0,001$ ) explain part of the variance in cyberbullying.

## 4. Discussion and conclusions

The main objective of this study was to analyse the relationships between family and school variables in understanding the problem of cyberbullying (Buelga & al., 2012; Kowalski & al., 2014). A large body of literature confirms the influence of the family and school contexts in the problem of traditional school bullying (Cava, 2011; Navarro & al., 2015; Pereda & al., 2014). From this perspective, taking into account that few studies have addressed this question in the area of cybernetic bullying, the focus of our study was to explore the existence of these relationships in the new and growing problem of cyberbullying.

Before examining this main proposal, the results of our study revealed that 27.4% of our sample had been victims of cyberbullying in the past year. These data coincide with recent studies that obtain a prevalence of cyberbullying victimization of between 25 and 30% (Erentaite, Bergman & Žukauskiene, 2012; Navarro & al., 2013). In addition, coinciding with the study by Taiariol (2010), our data confirmed that the cyberbullying was significantly related to the school and family variables examined in this study. The data indicate that the victims of cyberbullying, compared to the group of non-victims, present worse adjustment on all the school and family variables analysed. Thus, regarding the school setting, the results suggest that the adolescents who are



moderate and severe victims of cyberbullying have a significantly lower academic self-concept than the non-victimized adolescents, as well as a significantly diminished feeling of affiliation with their peers. These data are coherent with the studies by Ybarra, Mitchell, Wolak and Finkelhor (2006), and by Tokunaga (2010), who observe a decline in the school performance of cyberbullying victims and higher rates of school absenteeism. They also coincide with classic studies on school bullying that have consistently shown the negative effects of this type of violence on the victim's school adjustment (Bradshaw, Waasdorp, & Johnson, 2014; Cava & al., 2007). Moreover, also agreeing with Varjas, Henrich and Meyers (2009), our results reveal that severe cyberbullying victims have a more negative perception of the teacher's support. In this regard, Kowalski and Limber (2013) point out that cyberbullying victims do not perceive the teacher as a source of authority and help in solving their bullying problems with their peers. This lack of confidence in teachers reveals the need to include them in intervention programs that can offer resources to participate effectively in solving the problems of school bullying and cyberbullying. Furthermore, our results indicate, as could be predicted based on the mistreatment they are experiencing, that severe cyberbullying victims perceive less help and friendship from their classmates. This perception has been associated with cyberbullying victims' greater feelings of loneliness and generally more negative perceptions of friendships with peers (Buelga & al., 2014; Smahel, Brown, & Blinka, 2012). For adolescents, being popular, accepted and recognized by their peers is fundamental in this stage of the life cycle (Garandeau, Lee, & Salmivalli, 2014). Therefore, cyberbullying becomes an especially painful experience for their personal and social identity, and this is made worse when the quality of their family relations is also negative (Lereya & al., 2013). In fact, our data also seem to confirm that severe cyberbullying victims have more family conflicts, less family cohesion and less family expressiveness than adolescents who are not involved in cyberbullying. As pointed out by Postigo and others (2013), the negative quality of the family environment can be a risk factor that contributes to the adolescent being an easy target for mistreatment and intimidation by classmates, due to a lack of family resources to protect him/her from the violence. The results of this study show that the family plays an important role in minimizing the risks on the Internet (Sureda, Comas, & Morey, 2010), as a deterioration in the quality of the family environment contributes not only to greater vulnerability to being victimized, but also to a longer duration of the cyberbullying because of a lack of family support to deal with the problem (Navarro & al., 2013). In reality, it is in the home where adolescents learn values and norms of co-existence (Marín-Díaz & García-Fernández, 2003). Therefore, parents have to foster positive communication, not only at home, but also in the virtual world where their children navigate. As our results also suggest, the cyberbullying victim's family self-concept is significantly lower than that of adolescents who are not victimized through ICT. The influence of the family seems, then, to be related to the problem of cyberbullying. In fact, our results show that the family environment, with the most weight, and the school environment predict victimization through the mobile phone and Internet. These findings corroborate the importance of the family and the school as protective factors against violent behaviour in the virtual environment, as they promote a greater feeling of security and strengthen the adolescent's emotional connection with significant adults (Solecki, McLaughli, & Goldschmidt, 2014). Part of the cyber-victimization problem would depend, therefore, on the quality of the adolescents' relationships with the most significant people in their social environment (parents, teachers, and peer group). In addition, the role of parents and teachers is fundamental, as the best way for them to truly help the adolescents is by training and educating them about how to avoid and control the risks that exist online (Tejedor & Pulido, 2012). In summary, this study, like any other scientific study, has some limitations. The cross-sectional design keeps us from establishing a relationship of causality among the different variables considered in the study, so that it would be interesting to carry out longitudinal studies to examine the results obtained more closely. Likewise, the adolescents' responses on the self-reports could have social desirability effects and biases, although on this point the reliability and validity of the adolescents' self-reports to measure risk behaviours have been shown to be acceptable (Buelga & al., 2012; 2015).





However, and in spite of the limitations, this new and pioneer study contributes suggestive ideas for future studies. For example, both the family and the school should be included in cyberbullying prevention programs, and quantitative methodology should be combined with qualitative techniques to examine the problem of cyberbullying from the perspective of parents, teachers and adolescents more closely. This, in turn, would favour the development of effective programs to prevent and reduce this growing worldwide problem of peer bullying through ICT.

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