ORIGINAL

Victims of cyberbullying in the Region of Murcia: a growing reality

Víctor González-Calatayud[1]* 🆔

[1]Department Didactic and School Organization, University of Murcia, Spain {victor.gonzalez@um.es}

ABSTRACT

The fact that technologies have become a normal part of our lives has meant that bullying and other problems have shifted towards the virtual, hence complicating possible solutions. While before peer harassment occurred mainly at school, today Information and Communications Technology (ICT) means that children now have no place to "hide" from this problem. This and other features, like anonymity, have led many people to believe that this problem is more serious than traditional bullying. The purpose of this research was to determine the incidence of this phenomenon and its impact on students in compulsory secondary education in the Region of Murcia, specifically the prevalence of victimization and differences in relation to gender, age and academic year. One of the main results is that 49.3% of students have suffered from one or more cyberbullying behaviours. Greater victimization of females was observed in fourth of ESO and at higher ages (age ranges: 11-13; 14-15; 16-18). These results show the reality of secondary schools and the need to establish effective measures to solve this problem.

KEYWORDS: PEER HARASSMENT, ICT, GENDER, AGE

1 INTRODUCTION

In just over twenty years, digital technologies have burst into our life in all forms so radically and profoundly that we can assert that the media and communicative ecosystem was clearly transformed in the last quarter of the twentieth century. From the hegemonic model of the mass media we have moved to a model of production and dissemination of information characterized by a huge variety of personalized communicative processes (Area, Gutiérrez, & Vidal, 2012).

However while it is true that all these changes have occurred in the world of adults, young people are the social group that has been most influenced by these technologies (Fundación Telefónica, 2016). Today's adolescents were born into a world where ICTs were already widespread, and they have adapted these technologies to their daily chores in a seemingly almost mechanical and imperceptible way (Amichai-Hamburger & Barak, 2009; López & Solano, 2011; Solano, González, & López, 2013).

Nevertheless, the fact that technologies have become a normal part of our lives has meant that bullying and other problems have shifted towards the virtual, so complicating possible solutions. The increasing phe   ment occurred mainly at school, today the use of ICT means that children now have no place to "hide" from this problem (Slonje & Smith, 2008). This and other features, like anonymity (Sticca & Perren, 2012), have led many people to be-

lieve that this problem is more serious than traditional bullying. The situation is further aggravated by the mass media.

There is no consensus on what cyberbullying is (Aboujaoude, Savage, Starcevic, & Salame, 2015). There is a clear discrepancy between cyberbullying, considered a specific type of bullying (Del Rey, Elipe, & Ortega, 2012; Waasdorp & Bradshaw, 2015) or identifying it as a new construct with its own characteristics (Álvarez-García et al., 2011; Kubiszewski, Fontaine, Potard, & Auzoult, 2015). Although cyberbullying shares some features with traditional bullying, such as power imbalance and intentionality, there are noteworthy distinguishing features: anonymity (Lapidot-Lefler & Barak, 2012; Moore, Nakano, Enomoto, & Suda, 2012), the disinhibitory effect of the Internet (Casale, Fiovaranti, & Caplan, 2015), the size of the audience (Sticca & Perren, 2012) and repetition (Ybarra, Espelage, & Mitchell, 2014).

Studies conducted heretofore have varied in their attempts to understand this problem and to measure it, but the majority suggest that 20-50% of adolescents will experience at least one episode of cyberbullying during their adolescence, and that the number of cyber victims will increase over time (Berne et al., 2013; Garaigordobil & Aliri, 2013; González-Calatayud, Prendes-Espinosa, & López Pina, 2016; Tokunaga, 2010). Many victims of cyberbullying also suffer more traditional forms of harassment, and there is a strong relationship between the two forms of bullying (Cappadocia, Craig, & Pepler, 2013; Kowalski & Limber, 2013; Waasdorp & Bradshaw, 2015). Furthermore, in addition to differences among victims, there are also differences among perpetrators (Buelga, Cava, Musitu, & Torralba, 2015; Calvete, Orue, Estévez, Villardón, & Padilla, 2010).

These differences in relation to the number of victims and perpetrators could derive from the fact that there is no consensus as to whether cyberbullying repetition should be taken as a characteristic. Accordingly, there are studies where the authors refer to the need to bear repetition in mind as a key factor as with -traditional- bullying (Ang, Huan, & Florell, 2014; Müller, Pfetsch, & Ittel, 2014; Wachs, 2012; West, 2015), while other authors believe that with ICT it is impossible to know how often a video or web page, is viewed, copied and passed on to the others, so a victim can be humiliated time and again through a single act (Beckman, Hagquist, & Hellström, 2013; Frisén, Berne, & Lunde, 2014; Kowalski & Limber, 2013; Slonje, Smith, & Frisén, 2013). If you add to this the fact that a new questionnaire is often created for each study, and that the psychometric properties thereof vary (Berne et al., 2013), it is easily understood how many variations exist.

1.1 Gender differences

Some previous studies have identified the risk factors of cyberbu-

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*To whom correspondence should be addressed:

Faculty of Education, Campus universitario de Espinardo, University of Murcia, Avda. Teniente Flomesta, 5, 30003, Murcia (Spain)

llying by demographic variable. Likewise, boys are usually more likely to engage in bullying than girls, particularly physical bullying. For cyberbullying, in the various studies undertaken, the data obtained differs substantially in relation to gender (Connell, Schell-Busey, Pearce, & Negro, 2013). Thus, in some studies, women suffer more harassment than men (Beckman et al., 2013; Connell et al., 2013; Garaigordobil & Aliri, 2013; Lee & Shin, 2017; Stewart, Drescher, Maack, Ebesutani, & Young, 2014), while in others, the opposite is the case, with men being the most victimised (Gámez-Guadix, Villa-George, & Calvete, 2014; Huang & Chou, 2010; Pelfrey & Weber, 2013; Popovic-Citic, Djuric, & Cvetkovic, 2011; Yang, Lin, & Chen, 2014). There are other examples where no differences between the sexes have been found (Coelho, Sousa, Marchante, Bras, & Romao, 2016; Fletcher et al., 2014; Palermiti, Servidio, Bartolo, & Costabile, 2017).

From a sociological perspective, research shows that cases of cyberbullying are frequently related to the victims' gender and/or sexuality. Bullying among girls or abuse directed at girls tends to focus almost exclusively on body image, sexual morals, sexual jealousies or self-harm, while male-directed bullying usually relates to sexuality (homophobia) and/or lack of ability (especially sporting) (Donoso-Vázquez, Rubio Hurtado, & Vilà Baños, 2016; Ging & O'Higgins Norman, 2016).

1.2 Differences in age or academic year

As for the age and academic year, not all the studies analyse these. In some cases, the differences in age are analysed; in others, it is analysed according to the academic year (Calmaestra, 2011). In spite of this, there is also no consistency in the differences that the different authors have found. We find some papers where no significant statistical differences are reported (Garaigordobil, 2015; Pelfrey & Weber, 2013; Stewart et al., 2014; Waasdorp & Bradshaw, 2015). There are also studies where those involved, as cybervictims, were the oldest of the sample (Jung et al., 2014; Walrave & Heirman, 2011).

In a recent study (Coelho et al., 2016) it was found that the number of cases of cyberbullying decreased in line with academic years. However, in previous studies it was concluded that the highest percentages of cybervictims were in higher education (Barboza, 2015; Cappadocia et al., 2013; Kowalski & Limber, 2007).

2 METHOD

This work is part of a project to discover the prevalence of cyberbullying and the perception of teachers, and has been possible thanks to funding from the University of Murcia, within its program of university teacher training (FPU grant).

A type of ex post facto and transversal research was designed with quantitative methodology, in which a questionnaire was used to collect information.

2.1 Objectives

The purpose of this research was to determine the incidence of cyberbullying and its impact on students in compulsory secondary education in the Region of Murcia. More specifically, the research sought to determine the prevalence of cyberbullying in Murcia; to describe some of the main features of those involved in these situations; to ascertain the level of overlap between cyberbullying and traditional bullying; to relate the use of some technologies with cases of cyberbullying; and to ascertain the perception of teachers (González-Calatayud, 2016).

This paper presents the data obtained in relation to the victims

of cyberbullying. Thus, the prevalence of victims is shown and the differences in relation to gender, age and academic year are analysed.

2.2 Participants

The calculation of the sample was obtained with a randomized cluster sample. The sample size was estimated as having a confidence level of 95% (Z=1.96) and any un error muestral del 3.2%. The minimum estimated sample size was 925 cases, which were distributed among the districts used by the Regional Ministry of Education Inspection Service.

The sample consisted of 950 high school students aged between 11 and 18 years, with a mean age of 13.93 (SD = 1.35), taken from 10 state schools (64.8%) and state-subsidized schools (35.4%) in the Region of Murcia. The sample was composed of 50.4% males and 49.6% females. Students came from the four years of Compulsory Secondary Education (ESO) as follows: 1st ESO, 28.9%; 2nd ESO, 22.9%; 3rd ESO, 23.4%; and 4th ESO, 24.8%. 2.7% reported some kind of disability.

In terms of ICT access to participants in this study, 93.4% had a mobile phone. Similarly, 88.5% have a home computer connected to the Internet. On most occasions (42%), the computer is in the in the living room, but 36.3% indicated it was in their own room. Finally, the majority (83.5%), indicated that they had access to the Internet outside of the home, finding that the mobile phone (71.8%) is the most widely used technology for accessing the Internet.

2.3 Instrument

A systematic review of the different questionnaires created and used in previous research on this subject was conducted. 18 questionnaires were collected, which were obtained from published articles and from the authors of these instruments. After comparison, we decided to use the questionnaire designed by Garaigordobil (2013) entitled "Cyberbullying: Screening of peer harassment". This questionnaire has very high statistical reliability and validity. It showed an overall α = .91 reliability and very good reliability for the subscales. Exploratory factor analysis confirmed the structure of three factors within the scale of bullying (57.89% of the explained variance) and within the scale of cyberbullying (40.15% of the explained variance). Each of the factors comprises 15 items that refer to different behaviours related to the three roles -victim, aggressor and bystander- in cyberbullying. It also showed good convergent and divergent validity.

2.4 Procedure

First, we contacted the Ministry of Education of the Region of Murcia and presented all the information. The commitment sheet was signed. The Ministry contacted the schools, which were selected randomly. Once the schools had agreed to participate in the research, they were sent an authorization form for parents to sign to allow their children to participate. The questionnaire was sent after all signed authorizations had been returned. At the beginning of the session the whole procedure was explained to the students. The sessions lasted 15 to 30 minutes.

2.5 Data analysis

The SPSS statistical program, version 22.0, was used, adopting the level of bilateral significance of p <.05 in the whole study. First, a descriptive analysis of frequencies was performed. To compare the frequencies, contingency tables were made and the Chi-square statistic was used. Finally, Student t test and ANOVA

was used for differences in total scales. In terms of age, groupings were made in different age groups, as has been done in previous studies: 11-13, 14-15 and 16-18 years old.

3 RESULTS

3.1 Prevalence of cybervictims

The data showed that adolescents perform many of the behaviours evaluated and in some cases the percentage is quite high. The percentages obtained ranged from 2.4% to 27.2%. The behaviours that obtained the highest percentage and, therefore, require special attention were:

- Receiving offensive and insulting messages via mobile phone or Internet (27.2%).
- Receiving anonymous calls to frighten and provoke fear (22.2%).
- Being subjected to defamation through the Internet to discredit (17.3%).
- Receiving offensive and insulting calls via mobile phone or Internet (16.3%).
- Being blackmailed or threatened by messages or calls (11.9%).
- Theft of password to prevent access to accounts (11.4%).

If we focus on the data in general, 49.3% of the participants indicated that they had suffered one or more of these behaviours from other adolescents in the last year. A cut-off point marked by the questionnaire (the 95th percentile is used to indicate adolescents who are at real risk of being cyberbullied) was established. Only 6.3% of the sample can be considered victims of cyberbullying.

3.2 Gender differences

Regarding the gender differences in victimization in cyberbullying, the frequencies and percentages of male and female responses were obtained in both the 15 aggressive behaviours assessed and on the total scale of victims. When analysing the number of women and men who reported having suffered from cyberbullying, significant differences were found in 6 of the 15 behaviours evaluated (Table 1), finding that in all these behaviours with differences it was the females who suffered the most.

Table 1. Frequency, percentage and Chi-square of cybervictimization behaviour based on gender

Items	No Victim		Victim		χ^2	C
	Male	Female	Male	Female		
	n (%)	n (%)	n (%)	n (%)		
1	372 (77.8)	318 (67.7)	106 (22.2)	152 (32.3)		
2	418 (87.4)	374 (79.7)	60 (12.6)	97 (20.3)	10.54*	.105
3	465 (97.7)	457 (97.4)	11 (2.3)	12 (2.6)	3.9 ns	-
4	451 (94.4)	444 (94.5)	27 (5.6)	26 (5.5)	0.99 ns	-
5	459 (96)	456 (97)	19 (4)	14 (3)	1.52 ns	-
6	385 (80.7)	351 (74.7)	92 (19.3)	119 (25.3)	7.02 ns	-
7	437 (91.4)	398 (84.7)	41 (8.6)	72 (15.3)	11.01*	.107
8	463 (97.1)	446 (95.1)	14 (2.91)	23 (4.9)	3.58 ns	-
9	455 (95.2)	447 (95.1)	23 (4.8)	23 (4.9)	0.61 ns	-
10	425 (88.9)	415 (88.3)	53 (11.1)	55 (11.7)	10.72*	.106
11	466 (97.5)	459 (97.9)	12 (2.5)	10 (2.1)	1.02 ns	-
12	458 (95.8)	435 (92.8)	20 (4.2)	34 (7.2)	9.17*	.098
13	460 (96.2)	451 (96)	18 (3.8)	19 (4)	0.36 ns	-
14	461 (96.4)	448 (95.3)	17 (3.6)	22 (4.7)	1.54 ns	-
15	418 (87.6)	364 (77.6)	59 (12.4)	105 (22.4)	17.9***	.136

Note: Items or target behaviours: 1 = offensive/insulting messages; 2 = offensive/insulting calls; 3 = assaulting, recording, and hanging on the Internet; 4 = broadcasting private photos/videos; 5 = taking photos in dressing rooms, beach … to broadcast; 6 = anonymous frightening calls; 7 = blackmailing; 8 = sexual harassment by cell phone/Internet; 9 = identity theft; 10 = theft of password; 11 = rigging photos/videos and broadcasting them; 12 = isolating on social networks; 13 = blackmailing without broadcasting intimacy; 14 = death threats; 15 = slandering and spreading rumours to discredit someone.
* p < .05, ** p< .01, ***p< .001, ns =not significant, C: Contingency coefficient

If we analyse the percentages of males and females in the total cybervictim scale, that is, those who reported having suffered one or more of the behaviours analysed, of 49.4% of all cybervictims, 54.4% were females versus 44.6% % of males (Figure 1). In addition, from the Chi-square statistic it was found that the difference where there was a greatest percentage of female cybervictims was significant, $\chi^2(1, 948) = 8.91$, $p< .01$, with a contingency coefficient of .096.
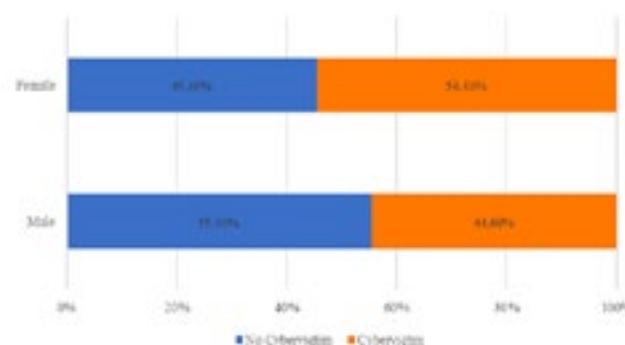

Figure1. Percentage of men and women cybervictims and not cybervictims

To further investigate gender differences, a t-test for independent samples was performed to analyse whether there were differences in the overall cyber-victimization scale. It was verified that the mean obtained by women (M = 2.07, SD = 3.35) was higher than that of males (M = 1.48, SD = 2.79). In addition, it was found that the differences between males and females were significant in terms of cybervictimization, finding that females were

cybervictims more often than males, and the size of the effect was low, $t (910.65) = -2.91$, $p< .01$, $d = -0.19$.

3.3 Differences in relation to the academic year

If we analyse the differences in relation to the academic year, statistically significant differences were observed in 6 of the 15 behaviours evaluated in the cybervictim role (Table 2). In general, it is distinguished that the scores go down from first to second, then rise again, with the highest scores in the third and fourth years.

The same is true when analysing the existence of differences between those who claim to have suffered or not one or more cyber-victimization behaviours. It was observed that the differences according to the year varied (Figure 2), with the highest percentage being in the fourth year.

These differences were found to be statistically significant, with the Pearson Chi-squareχ^2 (3, 950) = 23.76, $p< .001$, with the

contingency coefficient of .156. In addition, the average for the four courses was very varied: in first, M = 1.76, SD = 3.31; in second, M = 1.0, SD = 1.91; in third, M = 2.36, SD = 3.77; and fourth, M = 1.92, SD = 2.86. A significant difference was found in the means of the four ESO courses in the total cyber-victimization scale, finding that $F (3, 950) = 7.43$, $p< .001$, with a mean effect size $\omega^2 = .25$

Through Bonferroni's multiple comparisons it was possible to see how there are significant differences between the 2nd year of ESO with the other courses, with this academic year being lower than the other three (Table 3).

3.4 Differences in relation to age

Although there were no age differences in the total victimization scale, there was a positive correlation between age and the total cyber-victimization scale, r (941) = .14, p< .001, so according

Table 2. Frequencies and percentages in cybervictimization behaviours with significant differences

Items	No Cybervictim				Cybervictim				χ^2	C
	1º	2º	3º	4º	1º	2º	3º	4º		
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
1	206 (74.9)	166 (76.5)	153 (68.9)	167 (70.8)	69 (25.1)	51 (23.5)	69 (31.1)	69 (29.2)	21.26*	.148
2	241 (88)	195 (89.9)	171 (77)	187 (79.2)	33 (12)	22 (10.1)	51 (23)	49 (20.8)	22.68**	.153
6	220 (80.3)	189 (87.1)	152 (68.5)	177 (75)	54 (19.7)	28 (12.9)	70 (31.5)	59 (25)	26.97***	.166
7	241 (87.6)	205 (94.5)	190 (85.6)	201 (85.2)	34 (12.4)	12 (5.5)	32 (14.4)	35 (14.8)	21.41*	.148
10	247 (89.8)	200 (92.2)	196 (88.3)	199 (84.3)	28 (10.2)	17 (7.8)	26 (11.7)	37 (15.7)	18.23*	.137
15	236 (86.1)	198 (87.5)	177 (79.7)	182 (77.1)	38 (13.9)	27 (12.5)	45 (20.3)	54 (22.9)	24.53**	.159

Note: Items or target behaviours: 1 = offensive/insulting messages; 2 = offensive/insulting calls; 6 = anonymous frightening calls; 7 = blackmailing; 10 = theft of password; 15 = slandering and spreading rumours to discredit someone.
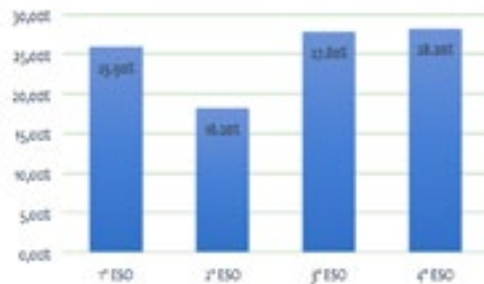* $p< .05$, ** $p< .01$, *** $p< .001$, C: Contingency coefficient

Table 3. Post Hoc Contrast (Bonferroni) for academic years in cybervictims

(I) Academic year	(J) Academic year	Difference in means (I-J)	Standard error	*p*
1º ESO	2º ESO	.759	.278	.039
	3º ESO	-.592	.276	.194
	4º ESO	-.160	.272	1.000
2º ESO	1º ESO	-.759	.278	.039
	3º ESO	-1.351	.292	<.001
	4º ESO	-.919	.288	.009
3º ESO	1º ESO	.592	.276	.194
	2º ESO	1.351	.292	<.001
	4º ESO	.432	.286	.788
4º ESO	1º ESO	.160	.272	1.000
	2º ESO	.919	.288	.009
	3º ESO	-.432	.286	.788

Figure 2. Cybervictims percent in the four years of ESO

to advancement in age, there are some more cases of victims of cyberbullying, although we must approach this data with caution.

On the other hand, if we consider the age group indicated above, it was observed that the mean for the 11-13 years (M = 1.28, DT = 2.64), the 14-15 years (M = 2.04, DT = 3.42) and 16-18 years (M = 2.29, DT = 2.77) is increasing, finding that the difference was significant, F (2, 941) = 8.01, p< .001, with a mean effect size $\omega2$ = .19. Through the adjustment for several comparisons using Bonferroni, it was determined that the mean is significantly lower between 11-13 and 14-15 years old and between 11-13 and 16-18 years old (Table 4).

Table 4. Post Hoc Contrast (Bonferroni) for age on the full scale of cybervictim

(I) Grouped age	(J) Grouped age	Difference in means (I-J)	Standard error	*p*
11-13 years old	14-15 years old	-.762*	.213	.001
	16-18 years old	-1.011*	.347	.011
14-15 years old	11-13 years old	.762*	.213	.001
	16-18 years old	-.248	.339	1.000
16-18 years old	11-13 years old	1.011*	.347	.011
	14-15 years old	.248	.339	1.000

4   DISCUSSION AND CONCLUSION

Cyberbullying is a problem that more and more young people are suffering. It is a reality that cannot be ignored and which has to be solved. In this paper it is shown that almost half of the adolescents sampled (49.3%), have suffered one or more cyberbullying behaviours in the last year. This figure is higher than in other studies (Del Rey et al., 2012; Kubiszewski et al., 2015; Waasdorp & Bradshaw, 2015; Ybarra et al., 2014), although similar to that found in others (Gámez-Guadix et al., 2014; Stewart et al., 2014). The discrepancies among the studies have been attributed to the lack of an established definition, the use of different instruments, or to the time interval considered (Aboujaoude et al., 2015; Berne et al., 2013). However, in this case, there is a considerable increase compared to the study by Garaigordobil and Aliri (2013), which used the same definition, the same instrument and the same time interval. Thus, this difference may be due to an increased ICT use by adolescents in recent years. In addition, it is a figure that closely resembles that found in bullying.As in traditional bullying, sex and age variables seem to be important factors in understanding cyberbullying.

In our sample of participants, differences in gender were found in cyberbullying, finding that females were more often victims than males. Furthermore, in the evaluated behaviours, girls reported higher percentages. Previous studies report inconsistent results regarding gender differences. This result is in line with authors who claim that girls are more likely to be victims of cyberbullying (Beckman et al., 2013; Connell et al., 2013; Garaigordobil & Aliri, 2013; Lee & Shin, 2017; Stewart et al., 2014), but it does not match those indicating that there are more male victims (Gámez-Guadix et al., 2014; Huang & Chou, 2010; Pelfrey & Weber, 2013; Popovic-Citic et al., 2011; Yang et al., 2014). This may be due to the fact that more women use the Internet for communication than men (Fundación Telefónica, 2016) or because girls tend to be more involved in cases of indirect bullying (Ortega et al., 2012). Even so, according to Ging and O'Higgins (2016), a

more holistic understanding of gender differences in cyberbullying could make for more effective interventions by teachers and public administration.

As some authors have mentioned (Coelho et al., 2016), the academic year is an important explanatory factor in this problem. Whereas in traditional bullying the highest percentage of victims was found in seventh grade (1º ESO), in cyberbullying it was found that the percentage who had suffered one or more behaviours increases as we move from lower to higher grades, with the highest percentage in the tenth grade (4º ESO). Nevertheless, most victimization was observed in the ninth grade, followed by the tenth. Consequently, there is more likelihood of being involved in cyberbullying in the second cycle of compulsory secondary education. While, on the one hand, these results are in line with authors who claim that more cases of cyberbullying occur in higher grades (Barboza, 2015; Cappadocia et al., 2013; Kowalski & Limber, 2007), on the other, they do not agree with research where more cases the percentage of victims decreased across school grades (Coelho et al., 2016).

Unlike studies that have not found a connection between age and cybervictimization (Calmaestra, 2011; Pelfrey & Weber, 2013; Stewart et al., 2014), our data shows a significant and positive relationship between the two variables. This data must be viewed with caution because the relationship is very weak. Even so, it is noted that the mean on the cybervictimization scale increases as age advances - according to the age groups of 11-13, 14-15 and 16-18. Unlike Garaigordobil (2015), who did not find differences in age on this scale, significant differences were found. In contrast to the data commonly obtained in traditional bullying, more cyberbullying cases were found in the upper grades, as occurs in other studies (Barboza, 2015; Cappadocia et al., 2013; Kowalski & Limber, 2007). The fact that the oldest adolescents access the Internet mostly away from the home, as well as being those most commonly found to have a computer in their own room, may explain why they account for more cybervictims (González-Calatayud, 2016).

As has been observed, cyberbullying is increasing gradually. Therefore, specialized care is required. It is not enough to not allow the use of ICT in schools, but it is necessary to teach how to use these tools properly because they will not stop using them. Subsequently, all this data will be sent to the administration and the schools involved so that they can start providing real solutions to this problem. Cyberbullying is already a reality in schools, a reality that resembles cases of bullying and therefore cannot be ignored by either the administration or the teachers. Given this, data protocol prevention in schools should be developed, as has been done in other countries, such as the Kiva project in Finland. Teaching children and teenagers that these situations are not acceptable can mean that in future cases observers may help their peers and avoid these situations.

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