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Cyberbullying in Adolescents from Ecuador and Spain: Prevalence and Differences in Gender, School Year and Ethnic-Cultural Background

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Abstract: The aim of this study is to discover the prevalence of cyberbullying among adolescents from Ecuador and Spain, and identify any differences by gender, school year, and ethnic-cultural background. A culturally-diverse group of 33,303 adolescents took part in the study (Ecuador = 10,918; Spain = 22,385). Our results show that in Ecuador, one in four, and in Spain, one in five teenagers were involved in cyberbullying. In both countries, teenagers in the higher school years were more commonly involved. Significant differences in gender and role of involvement were detected in both countries. In Ecuador, no differences were noted between the different ethnic-cultural groups as regards to the roles of involvement in cyberbullying. However, in Spain, these differences do exist. In this paper, these findings are discussed, and proposals for how to prevent cyberbullying are given.

Keywords: cyberbullying; cyberaggression; cybervictimization; secondary school; cross-cultural study; teenagers; cultural diversity

1. Introduction

Modern society is becoming increasingly digital [1]. Over the last two decades, the number of adolescents who communicate through the internet has surged, carrying with it the increased risk of being involved in cyberbullying [2–4]. This form of violence is linked to serious social, psychological, educational, and health problems for everyone involved [3,5–8], but it is the victims who suffer most, with social exclusion, profound depression, the use of addictive substances, or the ideation and attempts or consummation of suicide among the most serious consequences [9,10]. In addition, cyberbullying threatens the achievement of the Sustainable Development Goals. This study focuses on this phenomenon to provide scientific evidence to base measures for its prevention and eradication. Progress in this area can be of great help in achieving various Sustainable Development Goals, such as: good health and well-being; quality education; gender equality; and peace, justice, and strong institutions.

Cyberbullying can be defined as any intentional, repeated act of aggression committed online by an individual or group and directed towards victims whom they hurt and who cannot easily defend themselves [11,12]. It is a dynamic form of social interaction, and those involved in cyberbullying can take on different roles, as cyber-aggressor, cyber-victim, and cyber-victim/cyber-aggressor [13]. One characteristic element of this phenomenon is the imbalance of power between those involved [14]. This asymmetry or power difference can be expressed in terms of a social stigma [15] which some groups

of people suffer due to a certain characteristic, such as belonging to a minority ethnic-cultural group, having a disability or their homosexual or bisexual sexual orientation, among others [16–18]. Although this could be linked to the sociological phenomenon of cyberhate [19–22]—the use of hate speech on the internet—cyberbullying can be seen and understood as an interpersonal phenomenon which uses the medium of internet and consists of two main processes: cyber-aggression and cyber-victimization [23].

Some systematic reviews of studies of cyberbullying in adolescents carried out in different countries of the world estimate that the level of involvement—as aggressors, victims or aggressors-victims—is between 20% and 57% [24,25]. The recent EU Kids Online report [26] shows a frequency of cybervictimization of 9% and cyberaggression of 5%. The Global Kids Online [27] reports that between 6% and 29% of adolescents manifest "being treated in a hurtful way online". However, the comparison of these results is difficult because the methodological criteria adopted to measure cyberbullying are disparate. Among other aspects, the studies vary in the period of time about which the question is asked (from one year to one month) and in the ways of describing the phenomenon.

Over the vast region of Latin America, up to now, few studies have been conducted on cyberbullying [28], most of which have used small samples [29,30]. Despite this, overall interest and the number of studies is growing in Latin America. In Chile, for instance, 11.4% of adolescents reported having been the victim of some form of cyberbullying and 12.5% being a cyber-aggressor [30]. Meanwhile, in Colombia, the figure for cyber-victims among adolescents is 10.7%, with 2.5% for cyber-aggressors and 5.5% for cyber-aggressors/cyber-victims [31]. In Argentina, 39% reported occasional involvement as a cyber-victim, 13% of which were frequent victims; and regarding cyber-aggression, 27% were involved occasionally and 5% frequently [32]. Cross-cultural comparisons show that Spain has higher rates of mild cases than Uruguay and Colombia, while there were no major differences in severe cases between these countries [33]. A review of the scientific literature in the Web of Science and Scopus reveals that, in Ecuador, which shares a border with Colombia, no reliable studies on cyberbullying have been made available.

In Spain, the figures for cyber-victims is between 2% and 30%, between 1% and 44% for cyber-aggressors, and from 1% to 46% for cyber-aggressors/cyber-victims [34]. These percentages also vary between the autonomous communities in Spain and depend on the type of self-report methods used. For example, in Murcia, it has been observed that 5% of adolescents admitted to being cyber-victims, 1.5% cyber-offenders, and 1.2% cyber-victims/cyber-offenders [9]. The figures for the Basque Country among pre-adolescents include 13% who admitted being cyber-victims, 1% cyber-aggressors, and 3% cyber-victims/cyber-aggressors [7], while in adolescents, 30% acknowledged being victims and 16% aggressors [35]. In Andalusia, between 5% and 10% of adolescents are involved in cyberbullying as cyber-victims, 5–5.5% as cyber-aggressors, and 2–14.3% as cyber-victims/cyber-aggressors [13,36].

In early adolescence, as the children get older, cyber-aggression is more likely to occur [37]. Involvement in cyberbullying is most frequent in the last two years of secondary school [13,38,39]. Nevertheless, some studies show that adolescents in lower years report more cybervictimization than those in higher years [32].

A review of the literature comparing cyberbullying based on gender reveals relatively heterogeneous conclusions. Some research indicates that there are no significant differences between adolescent boys and girls in their involvement in cyberbullying either as aggressors [40,41] or as victims [42,43]. However, other studies show that girls are more commonly cyber-victims [9,39] and boys cyber-aggressors [9,32,44]. According to other studies, both cyber-aggression and cyber-victimization are more frequent in men [38].

Research into cyberbullying which studies its prevalence and how this relates to school year and gender has presented inconsistent results, partly due to the lack of homogeneity in the measuring tools [45,46]. Very few transnational studies exist on this topic [13,47] and most of these have been carried out on small sub-samples which are unrepresentative of each country. One of the biggest challenges is that the studies do not use validated instruments adapted to different cultures which would permit us to make rigorous, reliable comparisons of cyberbullying [29]. Indeed, there is a more

urgent need to study this phenomenon in the Latin American region [48], especially in countries where no scientific studies on this phenomenon have been published, such as in Ecuador.

Over the past decade, research into the use of Information and communications technology (ICT), internet and cyberbullying according to ethnic-cultural groups has become an emerging field in sociology. It has been observed that certain differences do exist between ethnic-cultural groups in the use of and proficiency in ICT and the Internet [49]. One study conducted in the USA concludes that adolescents who are victims of cyberbullying and bullying due to ethnic-cultural prejudices are twice as likely to attempt suicide than those who are simply victims of cyberbullying [50]. Another study carried out in Spain in secondary school students shows that depending on the country of origin—Spain, Colombia, Ecuador, Morocco, or Romania—there are no differences in the levels of cyber-aggression, but there are in the levels of cyber-victimization: those from Romania report more cyber-victimization than those born in Spain [23].

However, a review of the literature shows a gap in studies on cyberbullying in ethnic-cultural groups who have lived in the same country for some length of time and who maintain the signs of cultural identity which make them see themselves as different (for example, in Spain, the minority cultural group of Gypsies versus the majority non-Gypsy cultural group, and in Ecuador, indigenous peoples versus the descendants of colonists). Carrying out such studies would help enormously to improve and/or devise new strategies to prevent cyberbullying in multicultural societies and could open up the possibility for strategies which were more specific and/or specially adapted to the social/cultural particularities of each group [51].

We therefore proposed to carry out a transnational study comparing samples from Ecuador and Spain, using broad nationally-based sub-samples and employing the same instrument validated for the two cultural contexts. The objectives of this study were 1) to find out the prevalence of cyberbullying related to the different roles of involvement; and 2) to discover the variations in prevalence according to the school year, gender, and ethnic-cultural group of the participants. Based on the existing scientific literature, the hypotheses of the study are 1) in the higher years of school, more adolescents will be involved in cyberbullying than in the lower years; and 2) boys will be more involved as cyber-aggressor and girls will be more involved as cyber-victims.

2. Materials and Methods

2.1. Participants

The sample for the present study consisted of a total of 33,303 students (see Table 1) aged between 11 and 18 (mean age = 13.91; SD = 1326), of which 50.3% were girls. The sample was obtained from two different countries: Ecuador (n = 10 918; mean age Ecuador = 13.77; SD = 1,170; girls = 48.7%) and Spain (n = 22,385; mean age Spain = 13.97; SD = 1391; girls = 51%). The sample was collected using a random cluster procedure, in Spain from the whole national territory, and in Ecuador from Zone 4 of Ecuador, which contains the large provinces of Manabí and Santo Domingo de Los Tsáchilas.

In regards to the ethnic-cultural diversity of the sample, a different criterion was chosen for each country, based on their historical, social, and ethnic-cultural characteristics. In Ecuador, which considers itself a multi-ethnic, multicultural society and a country which essentially produces immigration, we used the ethnic-cultural criteria of that country, distinguishing between: whites (n = 198; 1.8%); mestizos (n = 9589; 87.9%); blacks (n = 503; 4.6%); indigenous people (n = 112; 1.0%); montubio people (n = 493; 4.5%); and others (n = 19; 0.2%). Spain is a country which mainly receives immigrants from different countries, and we decided to divide the sample into: majority group (n = 17,316; 77.5%); first-generation immigrants (n = 2350; 10.5%); second-generation immigrants (n = 2430; 10.9%); and gypsies (n = 258; 1.2%). This criterion is used in most of the studies that consider the ethnic-cultural aspects in Spain. First generation immigrants are born outside of Spain and reside in Spain. Second generation immigrants are those who were born in Spain and at least one of their parents was born in a

foreign country. People from the majority group in Spain are those who were born in Spain, whose parents are born in Spain, and are not gypsies.

There are some differences in the distribution of gender and school year according to ethnic-cultural diversity. The sample from Ecuador was distributed unequally according to gender, with more girls in the white and mestizo groups and less in the black and montubio groups, although no distribution differences were observed as regards school year. As for the Spanish sample, there was a similar proportion of boys and girls in each of the groups into which the sample was divided. However, there was an uneven distribution between the different school years. The second-generation Gypsy and immigrant groups were overrepresented in the 1st and 2nd years of secondary school and underrepresented in the 3rd and 4th years, and vice versa in the majority group.

Table 1. Distribution of the sample in relation to country of origin, school year, and gender.

		Ecuador			Spain		
		Girls	**Boys**	**Total**	**Girls**	**Boys**	**Total**
1st SS / 8th Basic	n	1158	1158	2220	2684	2887	5571
	%	52.2%	52.2%	100.0%	48.2%	51.8%	100.0%
2nd SS / 9th Basic	n	1259	1259	2448	3079	2856	5935
	%	51.4%	51.4%	100.0%	51.9%	48.1%	100.0%
3rd SS / 10th Basic	n	1462	1462	2943	2845	2588	5433
	%	49.7%	49.7%	100.0%	52.4%	47.6%	100.0%
4th SS / 1st HS	n	1717	1717	3303	2812	2634	5446
	%	52.0%	52.0%	100.0%	51.6%	48.4%	100.0%
Total	n	5596	5596	10,914	11,420	10,965	22,385
	%	51.3%	51.3%	100.0%	51.0%	49.0%	100.0%

Key: SS: Secondary school; HS: High school. 1st SS / 8th Basic (around 12–13 years old); 2nd SS / 9th Basic (around 13–14 years old); 3rd SS / 10th Basic (around 14–15 years old); 4th SS / 1st HS (around 15–16 years old).

2.2. Instrument

The Spanish version of the European Cyberbullying Intervention Project Questionnaire (ECIPQ) [52] was used. This instrument consists of 22 items with 5-point Likert-type responses (0 = never; 1 = Yes, once or twice; 2 = Yes, once or twice a month; 3 = Yes, about once a week; 4 = Yes, more than once a week), divided into two categories, cyber-victimization and cyber-aggression. The reliability values for the present study are optimal (αcyber-victimization = 0.894; αcyber-aggression = 0.916), and the factorial structure has been validated for Spanish-speaking countries with excellent results [29,52]. In the present study, optimal values were also obtained for its factorial structure [53] Satorra Bentler chi-square = 20,410.14, p = 0.00, NNFI = 0.98, CFI = 0.98, IFI = 0.98, RMSEA = 0.05 and SRMR = 0.07.

To establish the different roles of involvement (not involved; cyber-victim, cyber-aggressor, and cyber-victim/cyber-aggressor), the correction proposed by the authors [13] was taken into account, considering the level of involvement if a subject scored 2 or more in any of the items in the questionnaire.

2.3. Procedure

Permission was obtained from the schools and relevant educational authorities in both countries, and written informed consent was obtained from the parents/guardians via the schools. The participants were informed of the nature of the study and they were assured that their participation in the study was anonymous, confidential, and voluntary. They were also told that they could withdraw from the study at any time without incurring any penalization and without having to give reasons for their decision. The data was collected during school hours under direct supervision in both countries. The recorded data was encoded in a data matrix using SPSS 25 software. Data were first collected in Spain and

then collected in Ecuador. The data collection was carried out using paper-based questionnaires in Ecuador, and online questionnaires in Spain. In Ecuador, the number of computers and Internet access in schools was very limited. However, access to the Internet via mobile phones in adolescents is high outside of school. The procedure was approved by the Ethics Committee of the University of Córdoba and the research was conducted in line with national and international ethical standards.

2.4. Data Analysis

To study the relationship between the variables, contrasts between proportions were carried out using Pearson's Chi-square statistic. Cramér's V statistic of association was also used to minimize the effect of the sample size [54,55]. Finally, Haberman's adjusted standardized residuals [56] (hereafter ASR) were used to detect the cells with proportions which were higher or lower than expected.

3. Results

A significantly higher proportion of children involved in cyberbullying can be seen in the Ecuadorian sample than in the Spanish sample [$\chi2$ (3.33303) = 769,779. p = 0.000], although the coefficient Cramér's V = 0.15 (p = 0.000) points to a low association between the variables. The rate of involvement among adolescents in Spain was 18.9%, while in Ecuador the figure was 28.3%. The ASRs (see Table 2) reported a higher proportion of cyber-victims in Spain compared with Ecuador, while there was a higher proportion of cyber-aggressors and cyber-aggressors/cyber-victims in Ecuador compared with Spain.

Table 2. Comparison of proportions between different roles in cyberbullying by country.

Role		Ecuador	Spain	Total
Not Involved	%	71.7%	81.1%	78.0%
	ASR	−19.5	19.5	
Cyber-victim	%	8.7%	9.8%	9.4%
	ASR	−3.3	3.3	
Cyber-aggressor	%	5.1%	3.0%	3.7%
	ASR	9.6	−9.6	
Cyber-victim/ Cyber-aggressor	%	14.5%	6.1%	8.8%
	ASR	25.4	−25.4	
Total	n	10,918	22,385	33,303
	%	100.0%	100.0%	100.0%

Key: ASR = adjusted standardized residuals.

We next analyzed the changes in this phenomenon depending on the variables of school year and gender. The data showed an unequal distribution of roles between different school years, both in the Ecuadorian [$\chi2$ (9, 10,918) = 54,758, p = 0.000] and the Spanish sample [$\chi2$ (9, 22,385) = 157,410, p = 0.000]. The association values between the variables were low in both cases (Cramér's $V_{Ecuador}$ = 0.04; p = 0.000, Cramér's V_{Spain} = 0.05; p = 0.000). The ASR showed that the highest concentration of children involved was found in 4th year of Secondary as opposed to 1st year of Secondary, and 10th year of Basic Education versus 8th year of Basic Education in Ecuador, with the exception of cyber-offenders, who were more common in 9th year of Basic Education than in 1st year of High School (see Tables 3 and 4).

Table 3. Proportion of participants in the different roles of cyberbullying by school year in Ecuador.

			1st SS / 8th Basic	2nd SS / 9th Basic	3rd SS / 10th Basic	4th SS / 1st HS
Ecuador	Not Involved	%	75.5%	71.6%	68.8%	71.8%
		ASR	4.4	−0.1	−4.1	.2
	Cyber-victim	%	7.0%	7.9%	9.8%	9.4%
		ASR	−3.2	−1.6	2.6	1.7
	Cyber-aggressor	%	5.4%	6.3%	5.3%	3.9%
		ASR	0.6	3.1	0.5	−3.9
	Cyber-victim/ Cyber-aggressor	%	12.2%	14.2%	16.1%	14.9%
		ASR	−3.5	−0.5	2.8	0.8
	Total	n	2221	2448	2945	3304
		%	100.0%	100.0%	100.0%	100.0%

Key: SS: Secondary school; HS: High school. 1st SS / 8th Basic (around 12–13 years old); 2nd SS / 9th Basic (around 13–14 years old); 3rd SS / 10th Basic (around 14–15 years old); 4th SS / 1st HS (around 15–16 years old). ASR = adjusted standardized residuals.

Table 4. Proportion of participants in the different roles of cyberbullying by school year in Spain.

			1st SS / 8th Basic	2nd SS / 9th Basic	3rd SS / 10th Basic	4th SS / 1st HS
Spain	Not Involved	%	85.2%	81.1%	81.1%	77.1%
		ASR	8.9	−0.2	−0.1	−8.7
	Cyber-victim	%	8.8%	10.3%	9.5%	10.5%
		ASR	−2.9	1.6	−0.9	2.1
	Cyber-aggressor	%	1.8%	2.8%	3.3%	4.2%
		ASR	-6.3	−1.2	1.5	6.1
	Cyber-victim/ Cyber-aggressor	%	4.3%	5.8%	6.1%	8.1%
		ASR	−6.5	−0.9	0.2	7.2
	Total	n	5571	5935	5433	5446
		%	100.0%	100.0%	100.0%	100.0%

Key: SS: Secondary school; HS: High school. 1st SS / 8th Basic (around 12–13 years old); 2nd SS / 9th Basic (around 13–14 years old); 3rd SS / 10th Basic (around 14–15 years old); 4th SS / 1st HS (around 15–16 years old). ASR = adjusted standardized residuals.

By gender, an unequal distribution was found between boys and girls according to the role in cyberbullying, both in the Ecuadorian sample [$\chi2$ (3, 10,914) = 55,762, p = 0.000] and in the Spanish sample [$\chi2$ (3, 22,385) = 88,328, p = 0.000]. Again, the statistics showed a low association between variables (Cramér's $V_{Ecuador}$ = 0.07; p = 0.000, Cramér's V_{Spain} = 0.06; p = 0.000). The ASR (see Tables 5 and 6) did not reveal any statistically significant differences in the role of cyber-victim between boys and girls in the Ecuadorian sample. However, there was a higher proportion of boys than girls in the roles of cyber-aggressor and cyber-victim/cyber-aggressor. In the Spanish sample, the proportion of girls who were cyber-victims was greater than that of boys, and the proportion of boys as cyber-aggressors and cyber-victims/cyber-aggressors was higher than that of girls.

Table 5. Proportion of participants in the different roles of cyberbullying by gender in Ecuador.

			Girl	Boy
Ecuador	Not Involved	%	74.2%	69.4%
		ASR	5.6	−5.6
	Cyber-victim	%	9.1%	8.3%
		ASR	1.5	−1.5
	Cyber-aggressor	%	4.5%	5.7%
		ASR	−3.0	3.0
	Cyber-victim/ Cyber-aggressor	%	12.3%	16.6%
		ASR	−6.5	6.5
	Total	n	5318	5596
		%	100%	100%

Key: ASR = adjusted standardized residuals.

Table 6. Proportion of participants in the different roles of cyberbullying by gender in Spain.

			Chica	Chico
Spain	Not Involved	%	81.3%	81.0%
		ASR	0.6	−0.6
	Cyber-victim	%	11.0%	8.5%
		ASR	6.4	−6.4
	Cyber-aggressor	%	2.7%	3.4%
		ASR	−3.1	3.1
	Cyber-victim/ Cyber-aggressor	%	5.0%	7.2%
		ASR	−6.7	6.7
	Total	n	11,420	10,965
		%	100.0%	100.0%

Key: ASR = adjusted standardized residuals.

To deepen our knowledge about cyberbullying, the ethnic-cultural group of the participants was considered. In Ecuador, the categories used were whites, mestizos, blacks, natives, and montubios. The "others" group in Ecuador was omitted from the analyses because it only represented 0.2% of the sample (19 subjects). In the case of Spain, the categories used were the majority group, first generation immigrants, second generation immigrants, and Gypsies.

In the Ecuador sample (see Table 7), no significant differences were found in the distribution of roles by ethnic-cultural group [$\chi 2$ (12, 10,895) = 19,850, p = 0.070; Cramér's V = 0.025, p = 0.070]. After checking for gender and grade variables, no significant differences were detected.

In Spain, a distribution was found which revealed the influence of the ethnic-cultural variable [$\chi 2$ (9, 22,354) = 70,970, p = 0.000; Cramér's V = 0.033, p = 0.000] (see Table 8). The ASRs indicated a higher proportion of non-involvement than expected in the majority group and a lower figure than expected for cyber-aggressors and cyber-victims/cyber-aggressors. In the group of first-generation immigrants, a low figure for non-involvement and a high figure for cyber-victim/cyber-aggressor were found. In the group of second-generation immigrants, only a higher proportion of cyber-victims were detected.

Table 7. Proportion of participants in the different roles of cyberbullying by ethno-cultural group (Ecuador).

			White	**Mestizo**	**Black**	**Indigenous**	**Montubio**
Ecuador	Not Involved	%	76.3%	71.7%	67.0%	66.1%	75.1%
		ASR	1.4	0.3	−2.4	−1.3	1.7
	Cyber-victim	%	8.6%	8.6%	10.3%	8.0%	8.1%
		ASR	0.0	−0.5	1.4	−0.2	−0.5
	Cyber-aggressor	%	2.5%	5.3%	5.2%	3.6%	3.7%
		ASR	−1.7	1.9	0.0	−0.7	−1.5
	Cyber-victim/ Cyber-aggressor	%	12.6%	14.4%	17.5%	22.3%	13.2%
		ASR	−0.8	−1.1	1.9	2.4	−0.9
	Total	n	198	9589	503	112	493
		%	100.0%	100.0%	100.0%	100.0%	100.0%

Key: ASR = adjusted standardized residuals.

Table 8. Proportion of participants in the different roles of cyberbullying by ethno-cultural group (Spain).

			Majority Group	**1st Generation Immigrant Group**	**2nd Generation Immigrant Group**	**Gypsy Group**
Spain	Not Involved	%	81.7%	79.4%	79.9%	71.3%
		ASR	3.9	−2.3	−1.6	−4.0
	Cyber-victim	%	9.7%	9.4%	11.0%	7.4%
		ASR	−0.7	−0.8	2.2	−1.3
	Cyber-aggressor	%	2.9%	3.5%	3.1%	7.4%
		ASR	−2.4	1.6	0.2	4.1
	Cyber-victim/ Cyber-aggressor	%	5.7%	7.7%	6.0%	14.0%
		ASR	−3.8	3.6	−0.2	5.3
	Total	n	17316	2350	2430	258
		%	100.0%	100.0%	100.0%	100.0%

Key: ASR = adjusted standardized residuals.

In the Gypsy group, we detected a very high proportion of cyber-aggressors and cyber-victims/cyber-aggressor and a low proportion of "not-involved," compared to the other groups. Due to an unequal distribution in the school years between the different groups, the results were based on that variable. In 1st year of secondary school, practically the same trends were detected as in the general sample [$\chi2$ (9, 5566) = 93,312, p = 0.000; Cramér's V = 0.075, p = 0.000], except in the role of cyber-victim, where we did not detect a high proportion of second-generation immigrants but we did find a lower proportion of Gypsies. In the 2nd year of secondary school, no statistically significant differences were found between the different groups and their involvement in cyberbullying, as was the case in the 4th year of secondary school. In the 3rd year of secondary school, statistically significant differences were detected [$\chi2$ (9, 5421) = 25,494, p = 0.002; Cramér's V = 0.040, p = 0.002], but only in the over-representation of those not involved in the majority group, of cyber-aggressors and cyber-victims/cyber-aggressors in the Gypsy group and the under-representation of aggressors in the majority group.

4. Discussion and Conclusions

The results of the present study are important to understand cyberbullying. The scientific evidence provided on this violent phenomenon in schoolchildren considers the transnational, ethnic-cultural, and gender perspective. This allows their discussion, the drawing of conclusions and the preparation of improvement proposals to progress in the Sustainable Development Goals, specifically, to the

objectives of the good health and well-being; quality education; gender equality; and peace, justice, and strong institutions. In order to build peaceful, just, solidary, and committed societies to sustainable development, it is necessary to emphasize the improvement in interpersonal relationships and cooperation from childhood and adolescence.

The use of an instrument that records cyberbullying based on its characteristic elements and that has been validated in several countries in Europe and Latin America [29,52] allows for comparison with the results of some previous studies. This comparison, through the use of the same instrument, allows us to overcome the limitations observed in previous studies, due to methodological and criteria differences in the delimitation of cyberbullying [24–27].

In Ecuador, one in four adolescents is involved in cyberbullying. This contrasts with the figure for Colombia, which is one in five adolescents [31], a similar percentage found in other studies [33]. The comparison between the results of Ecuador and Colombia shows that 1) in the involvement as cyber victims, they hardly differ; and 2) they do differ significantly in their involvement as cyber-aggressors and as cyber-victims-cyber-aggressors, with higher rates of involvement in Ecuador. It has been observed that in Spain about one in five adolescents is involved in cyberbullying. This level of involvement is significantly lower than the level described in previous studies carried out on samples from Andalusia, a Spanish region: one in four adolescents [13,36]. The percentage of involvement as a cyber-victim—9.8%—is similar to that of the studies cited; however, 3% are cyber-aggressors and 6.1% are cyber-victims/cyber-aggressors, both below the figure found in previous studies. In Spain, the proportion of cyber-victims is more evident, while in Ecuador, the proportions of cyber-aggressors and cyber-victims/cyber-aggressors stand out more. The results obtained in Ecuador and Spain corroborate the first hypothesis of the study: adolescents from higher school years are more involved in cyberbullying than those from lower years. In adolescents in Ecuador, throughout the last three courses of Basic Education (compulsory schooling), the higher the school year, the greater the involvement in cyberbullying. The most notable differences were found between the levels of involvement in 8th and 10th grade of Basic Education. It is striking that in the 9th grade, the highest proportion of cyber-aggressors was recorded and in the 1st year of High School (non-obligatory schooling), the lowest proportion of these was recorded.

In the Spanish sample, it was evident that the higher the school year, the more involvement as a cyber-victim, cyber-aggressor, and cyber-victim/cyber-aggressor was registered. The greatest differences could be seen when comparing the levels of 1st and 4th years of secondary school. In general, these observations are consistent with what was expected—that involvement in cyberbullying increases in the last two years of secondary school [38,39,57].

Regarding the second hypothesis of the study, boys were expected to be more involved as cyber-aggressors and girls more as cyber-victims. This hypothesis was partially corroborated in the case of Ecuador and totally in the case of Spain. In both countries, more boys than girls had the roles of cyber-aggressor and cyber-victim/cyber-aggressor, which is consistent with previous findings [9,32,44]. In regards to Spain, more girls were cyber-victims than boys, which is a relatively common observation [9,33,39]; however, in Ecuador, boys were more likely to be cyber-victims than girls, which occurs less frequently [38]. The results of the present study support the conclusions made by previous studies which show that differences do exist between boys and girls in their involvement in cyberbullying, although the data provided shows a low association between the variables [39]. However, these results differ widely from the findings of some studies which indicate that no gender differences exist in the involvement in cyberbullying [41,42].

As for ethnic-cultural groups, we can conclude that, in Spain, adolescents from the majority group are the least involved in cyberbullying, with the lowest incidence of cyber-victims and cyber-victims/cyber-aggressors. The first-generation Gypsy and immigrant groups—which are minority cultural groups in Spain—are the ones most involved in cyberbullying; a) Gypsy adolescent boys and girls stand out as cyber-aggressors and as cyber-victims/cyber-aggressors; and b) first-generation immigrants stand out as cyber-victims/cyber aggressors, while second generation immigrant adolescents

in Spain are more frequently cyber-victims. In regards to the sample of adolescents in Ecuador, the conclusion was that there were no differences between the different ethnic-cultural groups—white, mestizo, black, indigenous, and montubio—in relation to the roles of involvement in cyberbullying.

Consequently, the third hypothesis of the study, that there are differences between ethnic-cultural groups in the roles of involvement in cyberbullying, can be confirmed in the sample from Spain, but not in the Ecuador sample. This conclusion for the Spanish sample coincides with the previous observation that within the same culture, different cultural subgroups of adolescents showed different levels of involvement as cyber-victims, with differences too in their coping strategies [58]. Based on the conclusions of the study by Mesch and Talmud [49], we could postulate that the differences observed between ethnic-cultural groups in their levels of involvement in different roles of cyberbullying could be partly explained by the evident differences between these groups in terms of access, habits, and skills in the use of ICT and Internet. Further social research is required in this area.

This study has certain strengths and limitations. Its strengths include the use of a solid, scalar instrument, validated in many countries, to measure cyberbullying (cyber-aggression and cyber-victimization), in addition to the large-scale transnational sample. Its limitations derive from the nature of the method used: the use of self-reports, and the cross-sectional design.

Cyberbullying is a social phenomenon which requires further study if we are to progress in our attempts to prevent and eradicate it. For future research, it would be better to use hetero-reports in addition to the self-reports, as well as qualitative records such as a study of the discourse used by those involved in interviews, for instance. The combination of self-reports and hetero-reports would allow the perceptions of those involved to be triangulated, which would enable us to obtain more accurate knowledge about their participation in different roles in the dynamics of cyberbullying, be it that of cyber-aggressor or cyber-victim or the mixed role of cyber-aggressor/cyber-victim.

Compiling qualitative information from those involved in cyberbullying would permit us to interpret the quantitative results better, and to find about other aspects of its perverse dynamics, which could also open new avenues for the study and treatment of this phenomenon. A longitudinal study of the aspects studied in this research would also help to shed light on how cyberbullying evolves. A future line of research could address the study of sexist prejudices and stereotypes, as well as patterns of sexist parenting and education, and how these relate to involvement in cyberbullying.

Similarly, given the differences noted in this work in Spain between ethnic-cultural groups, it would be interesting to discover whether cyberbullying for ethnic-cultural reasons differs from personal cyberbullying, as has been shown in other works which compare ethnic-cultural bullying with personal bullying [51]. We would suggest that in cyberbullying [11,12] and cyberhate [19–21], the interpersonal phenomenon of cyber-aggression and motivated cyber-victimization could occur, with a discriminatory purpose, or interpreted as such from the social stigma [15] towards ethnic-cultural minorities. This would be consistent with the observations made in some studies that are beginning to show that the boundaries between cyberbullying and cyberhate overlap, despite the differences which exist between the two [22].

Another important point is that when cyberbullying victims are also victims of ethnic-cultural bullying, the likelihood of suicide attempts is double compared with cyberbullying victims [50]. We would need to look into ethnic-cultural cyberbullying in greater depth and, to achieve this, instruments similar to those used in this study should be developed and specially adapted with sufficient sensitivity to detect and measure both cyber-aggression and cyber-victimization based on the social stigma connected with an ethnic-cultural group.

The general conclusions of this study show that cyberbullying is a widespread social phenomenon in both Ecuador and Spain. Judging from studies available in Latin America, the levels of involvement in cyberbullying in Ecuador are relatively high. Differences do exist in the levels of involvement as regards both school year and gender, although the association between the variables is low. In Spain, there are differences in the levels of involvement between different ethnic-cultural groups. The specific differences detected enable us to provide more effective management of social, psychological,

and educational prevention, training for coexistence and direct action to eradicate these forms of violence. For instance, it would be a good idea to increase preventive social and educational action in pre-adolescence—in the two school years when the children are 10–12 years old—and continue to carry it out throughout the adolescent years—the four school years from 12–16 years old—as well as to assign more human resources to look after minors at risk or who display risky behavior and victims in the last two years of compulsory education. Considering the results obtained in this study and from the discussion, there seems to be a marked degree of masculinization of cyber-aggression and feminization of cyber-victimization.

In the specific case of Ecuador, there is a clear masculinization of cyberbullying, since more boys than girls are involved in both cyber-aggression and cyber-victimization. One reason for this could be that boys have greater access, use, and enjoyment of technology compared to girls, as well as the different systems of socializing and awareness of the genders. We would therefore suggest that social and educational action be co-educational and include specific content to reduce prejudice and sexist stereotypes.

It can also be seen that minority cultural groups in Spain are those most commonly involved in cyberbullying and that many adolescents from these groups play different roles. In this country, therefore, cyberbullying prevention strategies should be oriented towards intercultural awareness, inclusion, and the fight against discrimination [51]. Social and educational action in Spain should also address the prevention of victimization by cyberbullying and behavior which exposes the victims to risk. This specific action is also recommended for Ecuador; however, in the Latin American country, it should also include an approach to counter the idea of cyber-aggression as a normalized form of social interaction in virtual and technological environments, as well as strengthening positive interpersonal behavior online which favors coexistence.

The social and educational action proposed here should be delivered within the framework of the teaching of safe, responsible use of ICT and Internet. This kind of education is vital for young people to be able to take full advantage of the digital world while avoiding its risks, knowing how to deal with possible cases of cyber-aggression, and coexisting with diversity. This education must be conveyed in different environments or on different social levels: the family, school, the community, and the media and internet. Designing socio-educational action in these environments for young people is up to the older generation; the state and its public bodies, through socio-educational policies based on sound scientific evidence, must help to protect the young and help them to grow up healthily in today's society.

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