Educación XX1
ISSN: 1139-613X · e-ISSN: 2174-5374

Family sociodemographic factors and cybervictimization in Primary Education

Factores sociodemográficos familiares y cibervictimización en Educación Primaria

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How to reference this article:

López-Castro, L., & López-Ratón, M. (2023). Family sociodemographic factors and cybervictimization in Primary Education. *Education XX1, 26* (2), 245-266. https://doi.org/10.5944/educxx1.35827

Date received: 14/10/2022
Date accepted: 16/01/2023
Published online: 13/06/2023

ABSTRACT

Cybervictimization is a social phenomenon in which a victim receives an intentional and aggressive act of harm from an aggressor/s, through technologies, from which victims cannot easily defend themselves. Victims present physical health symptoms, as well as low levels of psychological well-being and even higher levels of suicidal ideation and attempts. The alarming prevalence of cybervictimization in Primary Education in Spain ranges from 6.6% to 13.4% and has increased due to the COVID-19 confinement. For all these reasons, it is crucial to investigate the risk and protection factors that allow us to prevent them, especially those less studied in this educational stage, such as family sociodemographic variables. The objective of the study is to analyse the relationship between parental sociodemographic factors (age, gender, educational level, immigrant background, family composition, and degree of rurality of the municipality of family residence) and cybervictimization of their children in Primary Education. A sample of 1169 families with children in grades of 5th and 6th of Primary Education was selected, using a self-administered questionnaire (α = .84). Association studies were performed using binary logistic regression. The multivariate model followed a stepwise procedure, with the stepAIC function, selecting the best predictive

model. The bivariate analysis identified the parental educational level as an individual risk factor for cybervictimization ($p < .05$). In addition, single-parent families reached almost double the risk of two-parent families. The results of the multivariate analysis showed that gender, parental educational level, and family composition are jointly significant predictors of cybervictimization in Primary Education. It is concluded that there are family sociodemographic factors that predict cybervictimization and the results are analyzed for their implications for educational practice.

Keywords: bullying, cyberbullying, school violence, family, multivariate logistic, regression analysis

RESUMEN

La cibervictimización es un fenómeno social en el que una víctima recibe un acto intencional y agresivo de daño de un agresor/es, a través de las tecnologías, del que no puede defenderse fácilmente. Las víctimas presentan síntomas de salud física, así como bajos niveles de bienestar psicológico e, incluso, niveles más elevados de intentos e ideaciones suicidas. La prevalencia de la cibervictimización en Educación Primaria en España es alarmante, puesto que se sitúa entre el 6.6% y el 13.4%, incrementándose a raíz del confinamiento derivado del COVID-19. Por todo ello, resulta crucial investigar los factores de riesgo y de protección que nos permitan su prevención, especialmente sobre aquellos menos estudiados en esta etapa educativa como son las variables sociodemográficas. El objetivo del estudio es analizar la relación entre factores sociodemográficos parentales (edad, género y nivel educativo, antecedentes de inmigración, estructura familiar y grado de ruralidad del municipio de residencia familiar) y la cibervictimización en Educación Primaria de sus hijos. Se seleccionó una muestra de 1169 familias con hijos en 5º y 6º de Educación Primaria, valiéndose de un cuestionario autoadministrado ($\alpha = .84$). Los estudios de asociación se realizaron mediante regresión logística binaria. El modelo multivariante siguió un procedimiento *stepwise,* con la función *stepAIC,* seleccionándose el mejor modelo predictivo. Los análisis bivariantes identificaron el nivel educativo de la familia como factor de riesgo individual de la cibervictimización ($p < .05$). Además, las familias monoparentales alcanzaron casi el doble más de riesgo que las biparentales. Los resultados del análisis multivariante evidenciaron que el género, el nivel educativo y la estructura familiar se asocian significativamente de forma conjunta con la cibervictimización en Educación Primaria. Se concluye que existen factores sociodemográficos familiares que predicen la cibervictimización y se analizan las implicaciones que estos resultados suponen para la práctica educativa.

Palabras clave: acoso escolar, ciberacoso, violencia escolar, familia, logística multivariante, análisis de regresión

INTRODUCTION

The widespread use of technologies by children led to the expansion of bullying into the virtual space. The evolving technology and complexity of the phenomenon, combined with the use of multiple terms in different languages, make it challenging to clearly define cyberbullying. Within the framework of the definition of cyberbullying proposed by Smith et al. (2008), victimization refers to the experience of a student as a victim of an aggressive and intentional act of harm, by another person/s through technologies, which produces an imbalance of power between the victim and the aggressor/s, since they cannot easily defend themselves. However, the debate on the most appropriate definition is still open and there is a lack of consensus about its conceptual attributes (Smith, 2019).

In the research of cybervictimization, this term has been used when there is not a high repetition of online aggression or an imbalance of power between the victim and the aggressor/s. However, cybervictimization has also been defined as repeated negative behavior or attention over time by one person or a group towards another through information and communication technologies, such as threats and exclusion in social networks or unpleasant comments received by email (Gardella et al., 2017). In the present study, cybervictimization refers to students who have been attacked once or more by their classmates using insults, mockery, threats, false rumors, bullying and social exclusion through various electronic devices such as a tablet, computer (laptop or desktop), mobile phone, or game console.

Regarding the prevalence, there have been few studies that have reported the prevalence of cyberbullying and, specifically, of cybervictimization in the Primary Education stage in Spain since much of the research has focused on Secondary Education students. It is also the case in other countries (Smith, 2019). Likewise, there is a certain disparity in the prevalence rates that depend on the definition adopted, the methodology used and possible cultural differences (Smith, 2019). In addition, various studies have indicated that the confinement caused by COVID-19 led students to increase the time they use technologies with Internet access and, consequently, the number of victims of cyberbullying increased (Anccana et al., 2022; Gómez-León, 2021).

Currently, the prevalence of cybervictimization in Primary Education in Spain is between 6.6% (Estévez, 2021) and 13.4% (Machimbarrena & Garaigordobil, 2018) in students of 5th and 6th grade of Primary Education. Lower figures have also been obtained in a sample of students from 3rd to 6th grade of Primary Education, of which 4.9% recognized themselves as cybervictims (Sidera et al., 2021).

All in all, cybervictimization is a socially significant issue in early education (López-Pradas et al., 2017; Sidera et al., 2021), as its increasing prevalence can negatively impact health, well-being, and academic performance (Alzamil, 2021).

Thus, victims of cyberbullying present physical health symptoms such as fatigue, irritability, and sleep problems (Kowalski & Limber, 2013), as well as low levels of psychological well-being, emotional regulation problems, low self-esteem, isolation, social maladjustment (Extremera et al., 2018), antisocial behavior (Garaigordobil, 2017), anxiety (Doumas & Midgett, 2021), higher levels of depression (Zhang et al., 2020) and even higher levels of attempts and suicidal ideations (Iranzo et al., 2019).

For all these reasons, it is necessary to analyze those factors associated with cybervictimization that make it possible to prevent the involvement of students as victims of cyberbullying and to intervene early from the educational field with actions directed both towards students, families, and teachers. In this line, Görzig and Machackova (2015) have studied, through the socio-ecological approach, a series of risk and protection factors related to students, the family environment and other social aspects. In general terms, research on family variables has focused more on intrafamily communication, family climate, parental mediation, and parental educational styles, compared to sociodemographic variables, as reflected in the most recent systematic reviews of the literature (López-Castro & Priegue, 2019; Machimbarrena et al., 2019). Family sociodemographic factors play a significant role in minors' involvement in cybervictimization. While some of these factors have been studied in Secondary Education, it is necessary to also assess their influence in Primary Education.

Nikken and Schols (2015) found, in a sample of families in Early Childhood and Primary Education, that the parents's gender influences, along with other variables, the prediction of the presence of multimedia devices in the child's room. Specifically, fathers have indicated, more frequently than mothers, that their children have technological devices in their room. As is well known, the use of technology in the child's own room is associated with a greater risk of cybervictimization (González et al., 2016). In addition, Dedkova and Smahel (2019) pointed out in a sample of Czech families with children between the ages of 5 and 17, that mothers played a more active role than fathers in parental mediation strategies. These results agree with those found by Nikken and Schols (2015) who also detected differences based on the gender of the parents, with fathers applying supervision less frequently than mothers. In this sense, it should be taken into account that parental supervision is considered a protective factor against cybervictimization in students in Primary Education and Secondary Education (Martin-Criado et al., 2021).

Regarding the age of the parents and the cybervictimization of their children, Livingstone et al. (2017) found, in a sample of parents with children between 6 and 14 years old from 8 different European countries (N = 6400), that young parents presented greater active mediation, which is identified as a protective factor against cybervictimization (Wright, 2017). Adigwe (2021) has developed recent research on family sociodemographic variables, parental mediation and cybervictimization

experiences of minors from a sample of 1270 Nigerian families, with children between the ages of 13 and 18. The results reveal that restrictive mediation and co-use are positively associated with the age of the parents, being more frequent types of mediation in older parents, while technical mediation is negatively associated with said variable, so they are those younger parents tend to use it more frequently. It should be noted that restrictive parental mediation strategies are positively associated with cybervictimization (Wright, 2017).

Concerning the educational level of the family, Livingstone et al. (2015) revealed, in a sample of students in Childhood Education and Primary Education, that families with a lower educational level had more technological devices at home and felt less confident in their digital skills to carry out an effective active parental mediation compared to families with a high educational level. On the other hand, Nikken and Schols (2015) reported that the children of parents with a low educational level use technologies for a longer time and have technological devices in their own room, both variables being risk factors for cybervictimization (Sittichai & Smith, 2020; González et al., 2016). Finally, parents with a lower educational level use, more often, technical restrictions in the use of technological means by the child, than parents with a higher educational level who opt more frequently for active parental mediation, supervision, or co-use. In sum, Chen et al. (2018) discovered that children of parents with a low educational level have a higher risk of being cybervictims, in a sample of Chinese adolescents between 15 and 17 years old. Specifically, they indicated that a low educational level of the mother was associated with cybervictimization. Uludasdemir and Kucuk (2019) found that children of highly educated parents had a high probability of cybervictimization in a sample of children and adolescents between the ages of 12 and 17 in Turkey.

Regarding immigration background, Strohmeier et al. (2011) they affirmed that immigrant children in a Finnish sample of 7272 primary school students, aged 9-12, experienced more cybervictimization than their non-immigrant peers. Rodríguez-Hidalgo et al. (2019) found, in a sample of 25684 students from first to fourth grade, that immigrant students in Spain were more frequently cybervictims than native students in Secondary Education. Calmaestra et al. (2020) also pointed out that immigrant students in Secondary Education assumed the role of cybervictims more than natives in a sample of 33,303 adolescents from Ecuador (N = 10918) and Spain (n = 22385).

Another family sociodemographic factor associated with cybervictimization is family structure. Garmy et al. (2019) carried out research with an Icelandic sample of children aged 11, 13 and 15 (N = 11018), the results of which indicated that cybervictimization is associated with those students whose family structure did not allow them to live with their parents. Abdulsalam et al. (2017) also found, in a study of 989 students aged 12-14 in Kuwait, that children of divorced or widowed

parents were more likely to be cybervictims. Bevilacqua et al. (2017) found, in a sample of 6667 children and adolescents between the ages of 11 and 16 in the United Kingdom, that children from single-parent families were more likely to be victims of cyberbullying. Lastly, Chen et al. (2018) found, in research with 18341 adolescents aged 15-17 in China, that parents separated and divorced marital status was associated with cybervictimization of their children.

There have been few studies on cybervictimization that compare students from rural and urban environments as Kowalski et al. (2017) found. However, Rodríguez-Álvarez et al. (2022) recently indicated, in a sample of fifth and sixth grade students of Primary Education, that the percentage of victims is also significantly higher in schools in the rural context.

In short, it can be affirmed that there is scientific evidence that family sociodemographic variables play a prominent role in the cybervictimization of minors. However, there is a lack of specific research on family sociodemographic variables in a Spanish sample focused exclusively on the Primary Education stage, since the research is relatively recent. For all these reasons, it is necessary to know, exactly, the main risk factors that allow both prevention and early intervention in cybervictimization, being the educational stage of Primary Education the one that offers the greatest opportunities for primary prevention, since it is the key period of incursion in the use of technologies by minors (National Observatory of Technology and Society, 2022). Thus, cybervictimization is already observable in the last years of Primary Education (Rodríguez-Álvarez et al., 2022).

In this line, the objective of this study is to analyze the predictive capacity of sociodemographic parental variables (gender, age, immigration background, educational level, family structure and degree of rurality of the municipality of family residence) in the victimization of cyberbullying in fifth and sixth grade of Primary Education. Specifically, the following study hypotheses are proposed:

H1. The gender of the parent or legal guardian who answers the questionnaire influences the cyberbullying victimization of their children.
H2. The age of the parent or legal guardian who answers the questionnaire is related to the involvement of their children in cybervictimization.
H3. The educational level of the parent or legal guardian who responds to the questionnaire is associated with the risk of performance, by the minor, of the role of a victim of cyberbullying.
H4. The children of immigrant families are victims of cyberbullying more frequently than their native peers.
H5. Children of single-parent families are more frequently victims of cyberbullying.

H6. A high degree of rurality in the municipality of family residence increases the risk of minors being victims of cyberbullying.

H7. The sociodemographic parental variables (gender, age, immigration background, family structure, educational level, and degree of rurality of the municipality of family residence) are significantly associated with the cybervictimization of their children.

METHOD

In order to carry out this correlational and cross-sectional study, a two-stage sampling was carried out with the aim of selecting, first, the participating educational centers and, later, the families (fathers, mothers or legal guardians). The sample of centers consisted of 26 educational centers in total, being 17 Early Childhood and Primary Education Centers, 7 Private Centers and 2 Integrated Public Centers. Thus, the representation of population centers of different sizes (urban, semi-urban and rural) in Spain was achieved.

For the sample of families, participation was allowed to all those whose children were enrolled in the 5th and 6th grade of Primary Education in one of the 26 previously selected educational centers. 2094 families were invited and, finally, the participating sample consisted of 1169 families, guaranteeing the minimum sample size set at 381 families, $(1–\alpha)\% = 95\%$.

Regarding the most notable characteristics of the sample, 82% of the study participants were mothers or legal guardians and the remaining 17% were men. The relative who responded to the survey most frequently was the mother (80%), followed by the father (17%) and, to a lesser extent, both parents and legal guardians. The families were mostly between 41 and 50 years old (63%) and less frequently, between 30 and 40 years old (29%). With an even lower frequency, they were over 50 years old (5.1%) or under 30 (1.4%). In relation to the country of origin of the families, 13.6% stated that they came from other countries compared to the remaining 86.4% that indicated Spain. In addition, 38% have university studies, 27% Vocational Training, 18% primary studies, 15% secondary and 1% have no academic studies. Finally, the most frequent family structure was two-parent (70.5%), followed by single-parent families (12.9%) and extended families (12%).

Instrument

The instrument used to collect the information was a self-administered questionnaire that includes the sociodemographic profile of the parents or legal guardians (age, sex, country of origin, educational level, family structure, and municipality of residence) and the cybervictimization experiences of their parents. children, specifically, if the minors have been victims of any of the following types of cyberbullying: social exclusion, insults, threats, false rumors, teasing and intimidation during the six months prior to the study. The definition of cyberbullying proposed by Smith et al. (2008) which refers to the intention to harm the aggressor/s, the repetition, and the defenselessness of the victim due to an imbalance of power between her and the aggressor/s.

The validation of the instrument was carried out through the construct validity, the criterion validity, and the content validity, also evaluated by two experts in cybervictimization. To measure the reliability of the questionnaire, Cronbach's Alpha coefficient was found, obtaining an α value = .84. In short, an Exploratory Factorial Analysis of Principal Components with Oblimin rotation with Kaiser was carried out (KMO = .852, Barlett 's Sphericity Test = .000, total explained variance = 61%), which grouped the items based on the types of cybervictimization: teasing (.8), threats (.751), insults (.719), intimidation (.689), false rumors (.558) and social exclusion (.442). Although the α value corresponding to this last item of social exclusion was lower, all six items were considered valid according to the scientific literature. In addition, for simplicity for the analyses, the item was defined dichotomous: whether the minor has been (or has not) been a victim of any type of cyberbullying at least once in the six months prior to the study.

Process

The contact with the families was through the tutors of each group-class in each participating educational center, who distributed the questionnaires to the minors, inside sealed envelopes, so that they could deliver them to their parents or legal guardians and return them. to the center once completed within a maximum period of one week. To this end, the families were provided with brief instructions, located on the page prior to the start of the questionnaire, in which they were told that they should carefully read the presentation of the questionnaire and respond completely anonymously and sincerely, since, always, anonymity and confidentiality would be preserved, following the recommendations of the Code of Good Scientific Practices of The Spanish National Research Council.

Data analysis

All the qualitative variables studied were presented by absolute frequencies and percentages (see Table 1). The analysis of possible family sociodemographic risk factors for cybervictimization in Primary Education was carried out using binary logistic regression (Cox, 1970; McCullagh & Nelder, 1983), since the response variable that indicates whether the minor has been (or not) a victim of some type of cyberbullying, on at least one occasion during the previous six months, is a dichotomous variable.

Specifically, firstly, bivariate logistic regression models were implemented, in order to evaluate the influence, individually, of each variable as a possible risk factor for cybervictimization in Primary Education. Based on these models, the probability and risk of being a victim of *cyberbullying* were estimated by calculating the Odds ratio (OR), and its corresponding confidence interval for each of the sociodemographic family variables analyzed. Next, a logistic model was built to assess the combined impact, jointly, of various sociodemographic variables on the risk of cybervictimization. For the adjustment of this model, initially all the sociodemographic variables that had a p-value <.25 in the bivariate models (Hosmer et al., 2000), and following a stepwise procedure, the best predictive model was selected based on the Akaike Information Criterion (AIC), such that a model is better in terms of prediction the lower its AIC.

As in the bivariate models, the parameters of the multivariate model were contrasted using the Wald test, calculating the *OR* of the coefficients together with their confidence intervals and the respective p-values. In addition, the overall goodness of fit of the model obtained was evaluated using the Chi-square likelihood ratio test (Li & Babu, 2019), the absence of statistical significance of said test indicating that the quality of fit is good.

All statistical analyzes were performed with the statistical software *R* version 4.1.0 (R Core Team, 2020). The stepwise procedure was carried out with the *stepAIC* function of the *MASS* package of said program (Ripley, 2020), and a p-value <.05 was considered for statistical significance.

RESULTS

Of the total number of parents and legal guardians who responded to whether the minor had been a victim of cyberbullying, 115 (11%, 95% CI: 9% - 13%) stated that their child was a cybervictim on at least one occasion during the six months prior to the study. Table 1 shows the frequencies and percentages of each family sociodemographic variable in the groups of cybervictims and non-cybervictims.

Regarding gender, mothers and legal guardians have been the ones who have responded to the questionnaire more frequently than men, both in the case of cyber-victims and those who were not. However, the percentage of parents and legal guardians who have responded in the case of non-cybervictims has been higher. Related to age, both victims of cyberbullying and non-victims commonly have parents or legal guardians within the age range of 41 to 50. However, cybervictims more frequently present parents or legal guardians whose age is between 30 and 40 years. Regarding immigration background, cybervictimization has been higher in immigrant families compared to Spanish families.

The educational level of the parents or legal guardians shows greater differences between both groups, since the relatives of the non-cybervictims have, more frequently, university studies compared to those of the victims of cyberbullying. In addition, the parents, or legal guardians of the cybervictims have attended Vocational Education, Secondary Education or Primary Studies, more regularly, than those of the group not involved in cybervictimization. Regarding the family structure, the mode in both groups is two-parent families. However, non-cybervictims are members of two-parent families more frequently than cybervictims. For their part, victims of cyberbullying belong to single-parent families more frequently than non-cybervictims. Finally, respecting the degree of rurality of the municipality of family residence, it is evident that cybervictims reside in a rural environment more than non-cybervictims who live mainly in semi-urban environments.

Table 1

Distribution of frequencies of the sociodemographic parental variables in victims of cyberbullying and in non-cybervictims

Family variable	Not victim		Victim		Total	
	n	%	*n*	%	*n*	%
Gender						
Man	168	18%	13	12%	181	15%
Women	759	82%	99	88%	858	85%
Total	927	100%	112	100%	1039	100%
Age (in years)						
Less than 30	9	1%	2	1%	11	1%
Between 30 and 40	270	29%	41	36%	311	32%
Between 41 and 50	611	65%	68	60%	679	62%

Family variable	Not victim		Victim		Total	
	n	%	*n*	%	*n*	%
More than 50	47	5%	3	3%	50	5%
Total	937	100%	114	100%	1051	100%
Immigration background						
Yes	111	12%	13	22%	124	17%
Not	810	88%	47	78%	857	83%
Total	921	100%	60	100%	981	100%
Education level						
University studies	383	41%	31	27%	414	34%
Vocational training	254	27%	33	29%	287	28%
Secondary education	134	14%	27	24%	161	19%
Without studies or Primary Studies	167	18%	23	20%	190	19%
Total	938	100%	114	100%	1052	100%
Familiar structure						
Biparental	788	84%	84	74%	872	79%
Single parent	136	15%	28	25%	164	20%
Welcome center	1	<1%	0	0%	1	<1%
Extended family placement	12	1%	2	1%	14	1%
Total	937	100%	114	100%	1051	100%
Degree of rurality of the municipality of family residence						
Urban	298	33%	19	32%	317	33%
Semi-urban	329	37%	18	31%	347	36%
Rural	270	30%	22	37%	292	31%
Total	897	100%	59	100%	956	100%

Note. n: number of cases; %: percentage of cases.

The results of the bivariate analysis corresponding to the sociodemographic parental variables (Table 2) show that the educational level of the parents or legal guardians is a statistically significant univariate predictor ($p < .05$) of the risk of their children being victims of cyberbullying. Thus, parents or legal guardians who completed Secondary Education present a greater risk of cybervictimization of their children compared to those who have completed university studies. Regarding the family structure, although this variable was not statistically significant at the global level ($p > .05$), single-parent families reach almost double the risk of minors being victims of cyberbullying than traditional or two-parent families.

Table 2

Effect of sociodemographic parental variables on cybervictimization in Primary Education from the bivariate analysis of binary logistic regression

Gender	β	*SE*	*p* value	*OR*	95% CI
Gender					
Man					
Women	0.522	0.307	.089		
Age (in years)			**.251**		
Less than 30					
Between 30 and 40	- 0.381	0.800	.634		
Between 41 and 50	- 0.692	0.792	.383		
More than 50	- 1.248	0.983	.204		
Immigration background					
Not					
Yes	0.417	0.265	.116		
Education level			**.012***		
University studies				1	
Vocational training	0.473	0.263	.072		
Secondary Education	0.912	0.282	.001**	2.489	1.426 - 4.324
Without studies or Primary Studies	0.532	0.290	.067		
Familiar structure			**.058**		
Biparental				1	
Single parent	0.658	0.237	.006**	1.931	1.197 - 3.041

Gender	β	*SE*	*p* value	*OR*	95% CI
Welcome center	-11.327	535.411	.983		
Extended family placement	0.447	0.772	.563		
Degree of rurality of the municipality of family residence			**.396**		
Urban					
Semi-urban	-0.093	0.250	.711		
Rural	0.229	0.248	.355		

Note. β: coefficient; *SE*: standard error; *OR*: odds ratio; 95% CI: 95% confidence interval for the *OR*. *: $p < .05$; **: $p < .01$; ***: $p < .001$.

Based on the bivariate analyses, the variables initially selected to form part of the multivariate model were immigration background, education level, gender of the parent or legal guardian responding to the questionnaire and family structure.

The results of the multivariate analysis showed that the gender and educational level of the parent or legal guardian responding to the questionnaire and the family structure are sociodemographic parental variables significantly associated jointly ($p < .05$ in all cases) with the cybervictimization of their parents. children in Primary Education (Table 3). Specifically, when the mother or legal guardian responds to the questionnaire, the risk increases almost twice as compared to men ($p < .05$). In short, parents or legal guardians who studied Secondary Education as the highest educational level reach almost twice the risk of their children being victims of cyberbullying compared to those who studied at university ($p < .01$). Finally, students who belong to single-parent family structures present double the risk than those who are part of two-parent families ($p < .01$).

Table 3
Factors associated with cybervictimization in Primary Education. Multivariate logistic regression model

Gender	β	*SE*	*p* value	*OR*	95% CI
Gender					
Man Women	0.613	0.332	.027*	1.845	1.004 - 3.733
Education level			**.020***		
University studies				1	
Vocational training	0.454	0.269	.091		
Secondary Education	0.886	0.290	.002**	2.426	1.368 - 4.280
Without studies or Primary Studies	0.433	0.303	.153		
Familiar structure			**.013***		
Biparental				1	
Single parent	0.738	0.242	.002**	2.092	1.284 - 3.331
Extended family placement	0.529	0.793	.504		

Note. β: coefficient; *SE*: standard error; *OR*: odds ratio; 95% CI: 95% confidence interval for the *OR*. *: $p < .05$; **: $p < .01$; ***: $p < .001$.

DISCUSSION AND CONCLUSIONS

In this research, possible family sociodemographic risk factors for cybervictimization in Primary Education were studied. It should be noted that the studies published with an objective like ours are scarce, since most of the investigations on cybervictimization were carried out in Secondary Education (Smith, 2019) and have not analyzed the influence of family sociodemographic variables (López-Castro & Priegue, 2019; Machimbarrena et al., 2019). This fact highlights the interest of this study on family risk factors of a sociodemographic nature for cyberbullying victimization in Primary Education.

Regarding the proposed study hypotheses, firstly, the third hypothesis is verified (H3. The educational level of the parent or legal guardian who responds to the questionnaire is associated with the risk of performance, by the minor, of the role of a victim of cyberbullying), since minors belonging to families whose maximum educational level is Secondary Education register a higher risk of cybervictimization than families who have a higher level of education, such as university studies. These findings coincide with those reported by Chen et al. (2018) who identified that a low educational level of the mother is associated with the cybervictimization of her children in Secondary Education. In addition, their educational level also conditions the parental mediation that they carry out on the use of technologies by their children, since families with a lower educational level feel less confident in their digital skills to carry out effective active parental mediation compared to families with high educational level (Livingstone et al., 2015). Likewise, Nikken and Schols (2015) reported that parents with a low educational level allow their children to use technologies for longer and have technological devices in their own room, both of which are risk factors for cybervictimization (Sittichai & Smith, 2020; González et al., 2016). This phenomenon can be attributed to the influence of parental education on family values, skills, abilities, and knowledge towards formal education, which shapes educational practices and serves as a key factor in students' cultural capital.

Secondly, the fifth study hypothesis is partially confirmed (H5. Children of single-parent families are more frequently victims of cyberbullying). Although the family structure variable was not statistically significant globally at a significance level of 5%, significant differences were detected in single-parent households compared to two-parent households, the latter being the ones with the lowest risk. Our results support findings from previous studies, such as Garmy et al. (2019), who found a correlation between cybervictimization and students whose families don't live together, and Bevilacqua et al. (2017), who found that single-parent families had a higher likelihood of cybervictimization. Thus, the family structure plays a prominent role in cybervictimization both in Primary Education and in later stages. Previous research findings (Abdulsalam et al., 2017; Chen et al., 2018) also indicate that marital status of parents (specifically: widowed, separated or divorced) increase the risk of young people being victims of cyberbullying. This fact may have its origin in the different difficulties that single-parent families can present, such as the need for emotional and informational support, low family self-esteem, the risk of poverty and the lack of a social support network. Regarding parental mediation, parental supervision of the use of technologies and co-use could be more challenging for single-parent families since a single parent or legal guardian may encounter more difficulties in time management and family reconciliation.

Third, the seventh hypothesis is partially confirmed [H7. Sociodemographic parental variables (gender, age, immigration background, family structure, educational level, and degree of rurality of the municipality of family residence) are jointly significantly associated with the cybervictimization of their children]. In fact, gender, the maximum educational level of the parents and the constitution of the family home are statistically significant predictors ($p < .05$) jointly of cybervictimization in Primary Education. In this sense, the statistical non-significance of the Chi-square likelihood ratio test indicates that the multivariate model that has been obtained presents a good quality of fit and predictive reliability. Therefore, family structures that are made up of children and mothers, whose maximum educational level is Secondary Education, present a greater risk of them being victims of cyberbullying. This fact could be justified by the fact that there is a greater demand in the task of active parental mediation, parental supervision, and co-use for a single parent who, in addition, having a low educational level, will feel less confident in their digital skills to perform this task (Livingstone et al., 2015).

Finally, even though there is previous scientific evidence on the relationship between cybervictimization and the sociodemographic variables of the parent or legal guardian (gender, age, immigration background and degree of rurality of the municipality of family residence), in this study, it was not have found sufficient scientific evidence to support such hypotheses, therefore having to assume the corresponding null hypotheses of no association.

For all these reasons, it can be concluded that the research carried out identifies family sociodemographic factors associated, both jointly and individually, with the risk of cyberbullying victimization in Primary Education. Thus, the results obtained show the great importance of the educational level of the families and the family structure as risk factors for cybervictimization in Primary Education, agreeing with previous research carried out in Secondary Education.

These results are very useful when designing preventive strategies for cybervictimization to avoid the negative consequences on academic performance and, especially, on the health and general well-being of the minors involved (Alzamil, 2021). To elaborate proposals for educational intervention in cybervictimization, we can consider a socio-ecological or systemic approach (Bronfenbrenner, 1979). This theory explains the development of minors based on the interrelation of various social systems from the family and the peer group to local government and culture. In this way, prevention and intervention in cyberbullying should not only focus on minors but also on the various social systems in which children develop, in order to optimize the effectiveness of educational intervention. More specifically, an intervention proposal, from this theoretical approach, could be separated into three axes of action to address all members of the educational community, following the models of whole policy: students, families, and teachers/school.

Focusing on families, Gairín et al. (2013) mentioned that families should become aware of the seriousness of the problem, monitor the number of hours their children consume content, and pay attention to possible behavioral changes. To optimize the effectiveness of educational intervention, the focus should be on single-parent families with low educational levels, providing preventive support to regulate their children's use of online technologies and reducing frequency and number of devices. Specifically, the following dimensions could be included: 1) awareness of cybervictimization, 2) digital skills, 3) parental mediation skills, 4) parenting styles, 5) assertive communication, and 6) family involvement.

Educational intervention in these dimensions could help families to understand the risks that cybervictimization presents to the health and general well-being of their children. In addition, their digital skills could be improved, which would help them to increase their confidence when performing parental mediation. In this sense, it would also be positive if they develop specific parental mediation skills to regulate the use of technologies that their children make at home. In fact, active parental mediation works as a protective factor against cybervictimization and is also much more important than mediation that can be carried out from schools (Halpern et al., 2021). It would also be appropriate for them to know and be able to exercise a democratic parenting style, based on a high degree of affection and control, since it has been identified as a protective factor against cybervictimization. In short, the development of communication skills by families could be promoted so that they avoid communication deficits, punishment and intrafamily violence, since they present a greater risk of cybervictimization for their children. This educational intervention proposal aims to engage families in their children's digital and school life by providing support, fostering assertive communication, and establishing clear, stable, and agreed rules, which can help prevent cybervictimization.

Regarding the limitations of the study, we can identify the use of a self-administered questionnaire, since it would be positive to use other types of complementary instruments that allow the triangulation of the information collected. On the other hand, the cross-sectional nature of this study can be recognized as another limitation since it could be carried out longitudinally to find out how these variables affect minors based on their age.

Future research should include qualitative studies on single-parent families to gain a deeper understanding of their needs, to ensure the success of preventative programs. Likewise, cross-sectional studies on the influence of these sociodemographic variables on the perpetration of cyberbullying would be of great interest to identify possible differences depending on the roles of cyberbullying. In this sense, it would be positive to have a sample whose distribution was equitable according to gender. Finally, a longitudinal study that analyzes the influence of these variables in a group of single-parent families over a period of time that allows us to know how this relationship

evolves depending on the age of the minors, would be useful to adapt the strategies of prevention of the phenomenon.

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