Psychological adjustment in cybervictims and cyberbullies in secondary education

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Título: Ajuste psicológico en cibervíctimas y ciberagresores en educación secundaria.
Resumen: El auge de las agresiones cibernéticas entre estudiantes de secundaria y la importancia de ciertas variables de ajuste psicológico para la comprensión de este tipo de conducta violenta, tanto en agresores como en víctimas, nos han llevado a proponer como objetivo del presente trabajo analizar el perfil psicológico de ambos implicados en situaciones de ciberagresión. Las variables de ajuste analizadas fueron autoconcepto, estrés percibido, soledad, sintomatología depresiva, ansiedad social, satisfacción con la vida e inteligencia emocional. A partir de una muestra de 1318 adolescentes (47% chicos), de entre 11 y 18 años ($M = 13.8$, $DT = 1.32$), se establecieron tres grupos de contraste para cibervíctimas (víctimas severas, moderadas y no cibervíctimas) y tres grupos para ciberagresores (ciberagresores severos, moderados y no ciberagresores). El análisis de varianza mostró que los implicados presentan perfiles psicológicos menos ajustados. Las cibervíctimas severas mostraron mayor estrés percibido, soledad, depresión y ansiedad social, y menor autoconcepto, satisfacción con la vida e inteligencia emocional, en comparación con las no cibervíctimas. Los ciberagresores severos mostraron mayor estrés percibido, soledad y depresión, y menor autoconcepto y satisfacción con la vida, comparativamente con los no ciberagresores. Estos resultados permiten profundizar en la comprensión del ciberacoso entre estudiantes y mejorar los programas preventivos y de intervención en escuelas.
Palabras clave: ciberagresión; nuevas tecnologías; adolescencia; víctima; agresor; ajuste psicológico.

Abstract: The rise of cyberbullying among high school students and the importance of certain variables of psychological adjustment for the comprehension of this type of violent behavior both in bullies and in victims. This work aims to analyze the psychological profile of individuals involved in situations of cyberbullying, both victims and bullies. The adjustment variables analyzed were self-concept, perceived stress, loneliness, depressive symptomatology, social anxiety, life satisfaction, and emotional intelligence. Using a sample of 1318 adolescents (47% boys), aged between 11 and 18 years ($M = 13.8$, $SD = 1.32$), three contrast groups were established for cybervictims (severe cybervictims, moderate cybervictims, and non-cybervictims) and three groups for cyberbullies (severe cyberbullies, moderate cyberbullies, and non-cyberbullies). The results obtained through analysis of variance showed that both cybervictims and cyberbullies show deterioration in most of the studied dimensions, albeit with a different profile. Severe cybervictims showed higher scores in perceived stress, loneliness, depression, and social anxiety, and lower scores in self-concept, life satisfaction, and emotional intelligence, in comparison with non-cybervictims. Severe cyberbullies obtained higher scores in perceived stress, loneliness, and depression, and lower scores in self-concept and life satisfaction, compared to non-cyberbullies. These results allow deepening our comprehension of cyberbullying among students to improve preventive and intervention programs in schools.
Keywords: cyberbullying; new technologies; adolescence; victim; bully; psychological adjustment.

Introduction

Communication through the new technologies is a reality that is recently becoming more prominent at increasingly early ages (Fernández, Peñalva, & Irazabal, 2015). This can be a problem if cybercommunication is used as a means to attack other people (Durán & Martínez, 2015). This type of behavior is described as a hostile, intentional act that occurs repeatedly over time, performed by an individual or group, through the use of electronic devices against a victim who cannot defend him- or herself (Ortega-Barón, Buelga, & Cava, 2016; Smith et al., 2008). Despite the similarity to traditional bullying, characteristics such as the anonymity of the bullies or the larger audience for humiliation, grant their own identity and, in fact, seem to lead to even more negative and devastating consequences for the victims than those of direct bullying (García, 2013). In addition, the emergence of new electronic devices has increased the prevalence of cyberbullying (Ortega-Barón et al, 2016), with traditional and cybernetic bullying being closely related to each other, and turning direct violent behavior into the predictor variable with the

most explanatory weight for cyberbullying (Ortega-Baron, Buelga, Cava, & Torralba, 2017).

At the national level, the results of Ortega-Barón et al. (2016) in a sample of 1068 adolescents in the Valencian Community showed a 27.4% rate of cybervictimization, with 5.5% considered severe. Of the few studies that included direct comparisons of youngsters from 42 countries, the study on the Health Behavior in School Children (HBSC) indicated that the average percentage of 11-year-olds who had experienced cyberbullying through messages at least once in the last year was 10% compared to 11% of 13 year-olds and 11% of 15-year-olds (Inchley et al., 2016). From this perspective, it is clear that there is an increase in cyberbullying among children and adolescents in all developed countries, but are few works have jointly analyzed the relationships between cyberbullying and psychological adjustment variables (Cava, Buelga, Musitu, & Murgui, 2010). In addition, most research has focused on the cybervictim.

Thus, for example, it has been observed in some studies that cybervictims score more negatively in general self-concept than adolescents who do not suffer cyberbullying (Valdés, Alcántar, Reyes, Torres, & Urías, 2014). In particular, and from a multidimensional perspective of self-concept, recent studies with cybervictims suggest that family self-concept could be low in these adolescents, as a deteriorated family climate decreases children's social and individual resources, making them more vulnerable to peer bullying (Ler-

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eya, Samara, & Wolke, 2013) or to devoting more time to networking, thus avoiding negative family interactions (Gomes-Franco & Sendín, 2014). Other studies, however, state that cohesion and family support facilitate adolescents' social adjustment and positive peer relationships, thus constituting a protective factor against cyberbullying (Navarro, Ruiz-Oliva, Larrañaga, & Yubero, 2015), as well as against hostility, antisocial behavior, and peer violence (Buelga, Iranzo, Cava, & Torralba, 2015).

Regarding negative global self-concept, Ildırım, Çalıcı, and Erdoğan (2017) found positive correlations between this variable and cyberbullying and cybervictimization. In other works with multidimensional self-concept measures, a negative relationship was found between school violence and the dimensions of academic and family self-concept in particular (Estévez, Martínez, & Musitu, 2006). However, there are no references to previous studies that have examined the self-concept of cyberbullies from a multidimensional perspective.

Perceived stress is also considered as an indicator of psychological adjustment (Cénat et al., 2014) and it is high in cybervictims (Bartrina, 2014). Some investigations have also found high levels of stress in cyberbullies, and this has been considered a possible risk factor for violent behavior (Alonso & Romero, 2016). Also, the feeling of loneliness tends to be frequent in cybervictims (Şahin, 2012), as well as the perception of low social support (Romera, Cano, García-Fernández, & Ortega-Ruiz, 2016). These results converge with those obtained on traditional bullying, in the sense that bullies are the most rejected, and victims are the most excluded and also the ones who have the poorest school relations (Cerezo, Sánchez, Ruiz, & Arense, 2015). Investigations of cyberbullies are inconclusive because, whereas some studies find no relation between loneliness and cyberbullying (Sahín, 2012), others indicate that feelings of loneliness predict an important part of cybernetic bullying (Brewer & Kerslake, 2015).

In addition to loneliness, in various studies, high scores have been found in depressive symptomatology both in cybervictims (Modecki, Barber, & Vernon, 2013) and in cyberbullies (Schenk, Fremouw, & Keelan, 2013), and this symptomatology may be a risk factor for the development of violent behavior in bullies (Vlachout, Andreou, Botsoglou, & Didaskalou, 2011).

The development of anxiety also seems typical of cybervictims (Fahy et al., 2016), especially in social situations (Navarro, Yubero, Larrañaga, & Martínez, 2012). However, low levels of social anxiety have also been found in bullies (Campbell, Slee, Spears, Butler, & Kift, 2013). This generalized situation of helplessness and emotional maladaptation could underlie the explanation of the low levels of life satisfaction of both cybervictims (Ortega-Barón et al., 2016) and cyberbullies (Navarro et al., 2015).

A relationship between emotional intelligence (EI) and peer violence has also been observed, such that cybervictims (Nabuzoka, Rønningy, & Handegård, 2009), school bullies, and cyberbullies all have greater difficulty regulating emo-

tions (Baroncelli & Ciucci, 2014). In this line, previous studies (Fernández-González, Calvete, Orue, & Echezarraga, 2018; Garaigordobil, 2017) have concluded that adolescents with limited EI competencies have fewer resources to resolve interpersonal conflicts and resort more to aggression as a means of solving problems, to the detriment of more adaptive strategies.

This fact highlights the importance of emotion regulation for psychological adjustment and for the quality of interpersonal relationships (Samper-García, Mestre-Escrivá, Malonda, & Mesurado, 2015). In addition, the development of emotional skills that are typical of EI (paying attention, understanding, and knowing how to manage emotions) can reduce the risk in adolescent cybervictims of eventually developing psychological problems as a consequence of cyberbullying (Extremera, Quintana-Orts, Mérida-López, & Rey, 2018). However, we found no studies examining the independent contribution of the different dimensions of the EI construct to a better understanding of the situations of peer cyberbullying.

In short, peer bullying through new technologies, or cyberbullying, is a recent and growing problem, and previous works, many of which are based on traditional bullying, have confirmed the important role of psychological variables in its comprehension, development, and maintenance. Therefore, it is necessary to continue delving into the profile of the involved people, cybervictims and cyberbullies, in this case. The general objective of this study is to develop a psychological profile of cybervictims and cyberbullies according to sex and the categories of moderate and severe non-cyberbullies/cybervictims in the following variables: academic, family, physical and social self-concept, perceived stress, loneliness, depressive symptomatology, social anxiety—fear of negative evaluation, social avoidance and anxiety in new situations, and social avoidance and anxiety in general—, life satisfaction, and EI—emotional attention, emotional clarity, and emotion regulation.

Method

Participants

The participants in the study were 1,318 adolescents (47% boys and 53% girls), aged between 11 and 18 years (*M* = 13.8, *SD* = 1.32), and enrolled in four Compulsory Secondary Education (CSE) schools in the Andalusian, Aragonese, and Valencian communities. Student distribution by academic grade was balanced: 24.7% were enrolled in 1st grade of CSE, 27.3% in 2nd grade 23.7% in 3rd grade, and 24.3% in 4th grade. Sample selection was performed with probabilistic sampling, using as primary sampling units the urban geographical areas of the provinces of Alicante, Valencia, Seville, and Teruel, and as secondary units, the public schools in each area. The grades or classrooms were not used as tertiary units, as all the students of the four courses of CSE in all the schools participated. The socioeconomic

level of the areas and schools was average. Approximately one-fourth of the parents of the participating students had primary education, four had secondary education, four had high school studies, and four had university studies. Most of the parents had paid work outside the home: 86.7% of the fathers and 69.5% of the mothers.

Instruments

Cyberbullying Scale (CYB-AG; Buelga, & Pons, 2012). This scale measures the number of cyberbullying incidents committed during the past year through mobile phones using 24 items that assess behaviors involving aggression: Harassment (e.g., "I have insulted or ridiculed someone on social networks or in groups like WhatsApp to annoy or really disturb them"); Persecution (e.g., "I've threatened someone with phone calls or voice messages"), Denigration (e.g., " I have told lies or spread false rumors about someone in social networks or in class groups like WhatsApp"), Violation of Intimacy (e.g., "I have stolen photos, videos, private conversations from someone, and I have uploaded or sent them to other people"), Social exclusion (e.g., " I have ignored and not answered messages or things that someone has sent to groups or social networks to annoy them and make them feel bad"), Identity Theft (e.g.,"I have created a false profile on the Internet of someone using their personal data and posing as that person to say or do bad things"). The response scale ranges from 1 (*never*) to 5 (*very often*). The scale also has 3 items about the time and frequency of the aggressions and against whom they are directed. The Cronbach alpha obtained in the present sample was .94.

Cybervictimization Scale (CYBVIC-R; Buelga, Cava, & Musitu, 2010). This scale consists of 24 items that measure the harassment suffered by mobile phone and Internet during the last year: Harassment (e.g., "I have been insulted or ridiculed by someone on social networks or in groups like WhatsApp to really hurt me"), Persecution (e.g.,"They have forced me with threats to do things I did not want to do on the Internet or on the mobile"), Denigration (e.g., "They have told my secrets or revealed personal things about me without my permission on social networks or in groups"), Violation of Intimacy (e.g., "I have been recorded or they have taken humiliating photos of me without my permission they have distributed them on social networks"), Social Exclusion (e.g., "I have been ignored and they have not answered my messages or things that I have sent to groups or social networks to make me feel bad "), Identity Theft (e.g., "They have used my profile or my accounts without me being able to prevent it"). The response scale ranges from 1 (*never*) to 5 (*very often*). The scale also has 3 items about the time and frequency of the aggressions and the perpetrator. The Cronbach alpha obtained in this work was .94.

Self-concept Scale Form-5 (AF5; García & Musitu, 1999). This 24-item scale measures four dimensions of self-concept (6 items per dimension): Academic (e.g., "I work a lot in class"), Social (e.g., "I have trouble talking to

strangers"), Family (e.g., "I am very happy at home"), and Physical (e.g., "I take care of myself"). The response scale ranges between 1 (*strongly disagree*) and 99 (*strongly agree*). The Cronbach alpha in the present study was .89 for the global scale (Academic .92; Social .76; Family .87, and Physical .79).

Loneliness Scale (UCLA; Russell, 1996 [Spanish adaptation of Expósito & Moya, 1993]). This scale consists of 20 items that provide a general measure of loneliness. The responses range from 1 (*never*) to 4 (*always*). The scale presents an alpha reliability in this study of .92.

Depression Scale of the Center of Epidemiological Studies of the United States (CES-D; Radloff, 1977 [adaptation of Herrero & Meneses, 2006]). This 22-item instrument assesses from 1 (*Never or very rarely*) to 4 (*Always or most times*) the presence of depressive symptomatology in the last month. It provides a general index of depressed mood, assessing the symptomatology that usually accompanies it (e.g., "During the past month, I felt sad"). Cronbach's alpha in this study was .84.

Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983 [Spanish adaptation of Herrero & Meneses, 2006]). Through 14 items, it evaluates the degree to which the person has experienced certain situations as stressful in the past month (e.g., "In the past month, I felt that difficulties were piling up without being able to solve them"). The Likert-type response scale ranges from 1 (*never*) to 4 (*always*). The Cronbach alpha in this work was .66.

Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985 [Spanish adaptation of Atienza, Pons, Balaguer, & García-Merita, 2000]). This instrument contains 5 items that provide a general index of subjective perceived well-being (e.g., "I'm not happy with my life"). The items are rated on a four-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In this study, the Cronbach alpha was .79.

Social Anxiety Scale - Adolescents (SAS-A; La Greca & López, 1998 [adaptation of Olivares et al., 2005]). Through 22 items with a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*), it assesses adolescents' social anxiety responses in the context of their interpersonal relationships, through 3 dimensions: Fear of Negative Evaluation (e.g., "I am concerned about being evaluated by others", Avoidance and Social Anxiety in New Situations (e.g., "I get nervous when they introduce me to strangers"), and Avoidance and General Social Anxiety (e.g., "I'm ashamed even when I'm with people I know well"). The global Cronbach alpha of the present study was .92; and for the three dimensions, it was .87, .81, and .78, respectively.

Perceived emotional intelligence Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995 [adaptation of Fernández-Berrocal, Extremera, & Ramos, 2004, and Martín-Albo, Núñez, & León, 2010]). This scale consists of 22 items with 5 Likert-type response options (*strongly agree* to *strongly disagree*), which provide a measure of EI based on 3 dimensions: Emotional Attention (e.g., "I think about my mood constantly"), Emotional Clarity (e.g., "Often, I am mistaken

about my feelings") and Emotion Regulation (e.g., "Although I sometimes feel sad, I have an optimistic viewpoint"). The global Cronbach alpha of this study was .91, and for the dimensions, it was .91, .86, and .87, respectively.

Procedure

The data of this research were collected as part of a broader study on psychological adjustment in adolescence, prior authorization by the relevant educational authorities, as well as the ethics committee of the authors' university. Firstly, an initial telephone contact was established with the directors of the schools, followed by a meeting with all the teaching staff in which the objectives of the study and the procedure to be followed for data collection were reported. After the staff had agreed to participate, an explanatory letter was sent to the parents, requesting their consent. After parental consent was obtained (about 1% of the parents refused to allow their child to participate), the administration of the instruments was carried out by a group of previously trained researchers, during tutoring schedules in the students' habitual classrooms. Participation was voluntary (none of the adolescents refused to participate) and anonymous, and students' privacy was guaranteed, thereby reducing the possible effects of social desirability. Surveys with suspicious response patterns were not coded in the database (these surveys accounted for 1% of the total sample).

Statistical analysis

All the analyses were performed with the SPSS 20 statistical package (version 20). The imputation of missing data was made through multiple regression with the maximum likelihood procedure. For the present study, participants were firstly classified in three contrast groups, based on their scores in the scales of bullying and victimization through mobile phone and the Internet. According to the criteria of Smith et al. (2008), participants who scored 1 (*Never*) on both scales were assigned to Non-cyberbully and Non-cybervictims groups respectively; Participants who scored between 2 (*1 or 2 times a month*) and 3 (*3-5 times a month*) on the scales were allocated to Moderate Cyberbully and Moderate Cybervictim groups (less than one aggression per week); lastly, participants who scored between 4 (*6-10 times a month*) and 5 (*more than 10 times a month*) were assigned to the Severe Cyberbully and Severe Cybervictim groups (more than one aggression per week).

After establishing the contrast groups, Pearson correlation analysis was performed to determine the relationships between cybervictimization and cyberbullying and the rest of the variables and dimensions of the study. Subsequently, analysis of variance (*ANOVA*) was performed to determine possible significant differences between the three contrast groups of cybervictims and cyberbullies in the variables examined. The effect size was also calculated, considering it small when $\eta^2 = .01 - .06$, moderately when $\eta^2 = .06 - .14$),

and large when $\eta^2 > .14$ (Faul, Erdfelder, & Buchnery Lang, 2009).

Results

Frequency of cybervictimization and cyberbullying

Regarding cybervictimization, the data obtained show that 58.61% (*n* = 650) of the participants of this study had never been victimized over Internet or by mobile phone. However, 41.39% (*n* = 459) of the participants indicated that they had suffered bullying at some time in the past year. Of the total of these victims, 37.24% (*n* = 413) was classified in the group of moderate cybervictims, and 4.15% (*n* = 46) in the group of severe cybervictims.

In the case of cyberbullying, 73.66% (*n* = 797) of the adolescents were classified as non-bullies. Of the remaining 26.34% (*n* = 285), 24.59% (*n* = 266) belonged to the group of moderate cyberbullies, and 1.76% (*n* = 19) to the group of severe cyberbullies.

Relationships between cybervictimization and cyberbullying and psychological adjustment variables

The Pearson correlation analysis (Table 1) shows that cybervictimization and cyberbullying correlate positively and significantly with each other. In the case of cybervictimization, positive and statistically significant correlations (*p* < .01) were observed with all the variables of loneliness, depression, and social anxiety, and with the EI dimension of Emotional Attention (*p* > .05), and negatively with all the variables of self-concept, life satisfaction, and Emotional Comprehension (EI). Cyberbullying correlated positively with perceived stress, depression and with all the dimensions of the variable social anxiety (*p* < .01), and with the variable loneliness (*p* < .05). Cyberbullying correlated negatively with the dimensions of academic and family self-concept, as well as with life satisfaction (*p* < .01), and with the EI dimensions of emotional comprehension and emotional regulation (*p* < .05).

It can also be observed in Table 1 that there are no statistically significant sex differences in the variables cybervictimization and cyberbullying. In contrast, statistically significant differences between boys and girls are observed in the dimensions of academic (*t* = -5.17, *p* < .01), family (*t* = 2.10, *p* < .05), and physical self-concept (*t* = 7.10, *p* < .01), loneliness (*t* = -3.66, *p* < .01), depressive symptomatology (*t* = -4.35, *p* < .01), perceived stress (*t* = -2.77, *p* < .01), fear of negative evaluation(*t* = -2.47, *p* < .05), social avoidance and anxiety in new situations (*t* = -2.24, *p* < .05), life satisfaction (*t* = 2.65, *p* < .01) and emotional attention (*t* = -6.31, *p* < .01).

Group differences in cybervictims in the psychological adjustment variables

The *ANOVA* in the cybervictims (Table 2) showed that non-cybervictims have a significantly higher self-concept than the groups of cybervictims in Family ($F_{(2, 1109)} = 5.70$, $p < .05$), Physical ($F_{(2, 1109)} = 13.74$, $p < .05$), and Social Self-concept, ($F_{(2, 1109)} = 7.96$, $p < .05$) although the magnitude of differences was small ($\eta^2 = .01$, $\eta^2 = .03$, $\eta^2 = .02$, respectively). With regard to perceived stress ($F_{(2, 1109)} = 32.84$ $p < .05$), loneliness ($F_{(2, 1109)} = 40.09$, $p < .05$), and depressive symptomatology ($F_{(2, 1109)} = 60.13$, $p < .05$), severe cybervictims scored significantly higher than moderate cybervictims, and the latter, in turn, scored higher than non-cybervictims. The magnitude of the differences was small in the case of stress ($\eta^2 = .00$), and moderate in the rest of the cases ($\eta^2 = .06$ and $\eta^2 = .10$, respectively). Regarding social anxiety, fear of negative evaluation ($F_{(2, 1109)} = 53.31$, $p < .05$) and avoidance and general social anxiety ($F_{(2, 1109)} = 18.61$, $p < .05$) were significantly higher in severe cybervictims than in moderate ones, and moderate cybervictims scored significantly higher than non-cybervictims. The magnitude of these differences was moderate and small ($\eta^2 = .09$ and $\eta^2 = .03$, respectively). However, in avoidance and social anxiety in new situations ($F_{(2,1109)} = 10.76$, $p < .05$), the groups of cybervictims scored significantly higher than the non-cybervictims, with a small magnitude of differences ($\eta^2 = .02$). The results in life satisfaction ($F_{(2, 1109)} = 45.28$, $p < .05$) showed that non-cybervictims had higher scores than moderate cybervictims, and the latter, in turn, had higher scores than severe cybervictims, with a moderate magnitude of differences ($\eta^2 = .08$). Regarding EI, moderate cybervictims paid more attention to their emotions ($F_{(2,1109)} = 4.27$, $p < .05$) than non-cybervictims. However, non-cybervictims had greater emotional clarity ($F_{(2, 1109)} = 4.81$, $p < .05$) and emotion regulation ($F_{(2, 1109)} = 6.63$, $p < .05$) than severe and moderate cybervictims. The magnitude of the differences was small ($\eta^2 = .01$) in all the dimensions.

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

	CV	CB	A-SC	F-SC	Phy-SC	Soc-SC	L	DS	PS	FNE	ASN	ASG	LS	EA	EC	ER
CV	1															
CB	.52**	1														
A-SC	-.13**	-.17**	1													
F-SC	-.14**	-.08**	.29**	1												
Phy-SC	-.17**	-.03	.35**	.31**	1											
Soc-SC	-.16**	-.04	.28**	.33**	.33**	1										
L	.32**	.07*	-.24**	-.33**	-.46**	-.30**	1									
DS	.34**	.10**	-.22**	-.20**	-.35**	-.14**	.61**	1								
PS	.27**	.09**	-.24**	-.20**	-.32**	-.13**	.54**	.68**	1							
FNE	.31**	.15**	-.08**	-.09**	-.32**	-.07**	.44**	.40**	.36**	1						
ASN	.12**	.03	-.04	-.03	-.28**	.08**	.37**	.31**	.26**	.62**	1					
ASG	.24**	.09**	-.15**	-.13**	-.31**	-.11**	.50**	.36**	.32**	.64**	.65**	1				
LS	-.30**	-.14**	.34**	.34**	.41**	.22**	-.56**	-.55**	-.53**	-.36**	-.24**	-.32**	1			
EA	.06*	-.00	.13**	.08**	.06*	.08**	-.01	.12**	.04	.17**	.14**	.07*	.03	1		
EC	-.14**	-.07*	.21**	.22**	.32**	.15**	-.37**	-.28**	-.33**	-.22**	-.14**	-.22**	.34**	.35**	1	
ER	-.11**	-.06*	.21**	.22**	.28**	.14**	-.34**	-.27**	-.32**	-.17**	-.09**	-.16**	.34**	.33**	.54**	1
M boys	1.23	1.15	5.59	5.66	6.16	5.71	1.79	1.78	1.98	2.18	2.53	1.90	3.41	3.10	3.35	3.41
SD boys	.40	.34	1.89	.93	1.73	1.06	.46	.59	.61	.81	.86	.83	.80	.92	.81	.90
M girls	1.24	1.12	6.11	5.56	5.47	5.71	1.88	1.93	2.08	2.29	2.64	1.84	3.29	3.42	3.35	3.39
SD girls	.38	.25	1.73	.87	1.79	.95	.47	.66	.67	.84	.84	.76	.86	.90	.77	.90
T	-.29	1.85	-5.17**	2.10*	7.10**	-.03	-3.66**	-4.35**	-2.77**	-2.47*	-2.24*	1.45	2.65**	-6.31**	-.07	.27

Note: CV = cybervictimization; CB = Cyberbullying; A-SC=Academic self-concept; F-SC=Family Self-concept; Phy-SC=Physical self-concept; Soc-SC=Social self-concept; L=Loneliness; DS=Depressive Symptomatology; PS=Perceived stress; FNE=Fear of negative assessment; ASN=Avoidance and social anxiety in new situations; ASG=Avoidance and social anxiety in general; LS=Life Satisfaction; EA=Emotional attention; EC=Emotional Clarity; ER=Emotional Regulation; *M*=Mean; *SD*=standard deviation; *T* = Students' t-test .
*p < .05. **p < .01.

Table 2 Psychological Adjustment Variables in Cybervictims.

	Non-Cybervictims		Moderate Cybervictims		Severe Cybervictims		F	p
	M	SD	M	SD	M	SD		
Self-concept:								
Academic	5.94	(1.87)	5.81	(1.83)	5.36	(2.03)	2.44	*ns*
Family	5.67[a]	(0.91)	5.52[b]	(0.89)	5.29[b]	(1.16)	5.70†	.00
Physical	5.98[a]	(1.76)	5.52[b]	(1.89)	4.88[b]	(2.12)	13.74†	.00
Social	5.79[a]	(1.06)	5.63[b]	(0.98)	5.23[c]	(1.13)	7.96†	.00
Perceived stress:	1.93[c]	(0.62)	2.14[b]	(0.66)	2.61[a]	(0.77)	32.84†	.00
Loneliness:	1.76[c]	(0.43)	1.92[b]	(0.49)	2.26[a]	(0.58)	36.73††	.00
Depression:								
Depressive Symptomatology	1.71[c]	(0.58)	2.03[b]	(0.65)	2.49[a]	(0.76)	60.13††	.00
Social anxiety:								
Fear of negative assessment	2.07[c]	(0.77)	2.46[b]	(0.88)	3.08[a]	(0.82)	53.31††	.00
Avoidance and social anxiety new situations	2.52[b]	(0.85)	2.71[a]	(0.87)	2.99[a]	(1.07)	10.76†	.00
Avoidance and general social anxiety	1.79[c]	(0.79)	1.95[b]	(0.79)	2.49[a]	(1.09)	18.61†	.00
Life Satisfaction:	3.48[a]	(0.79)	3.22[b]	(0.84)	2.39[c]	(0.85)	45.28††	.00
EI:								
Emotional Attention	3.21[b]	(0.97)	3.38[a]	(0.90)	3.36[a]	(0.96)	4.27†	.02
Emotional Clarity	3.39[a]	(0.84)	3.30	(0.78)	3.05[b]	(0.83)	4.81†	.01
Emotion Regulation	3.48[a]	(0.92)	3.32[b]	(0.92)	3.08[b]	(0.98)	6.63†	.00

Note: M = mean; SD = Standard Deviation; F = Fisher-Snedecor F; Bonferroni Test = a > b > c

Effect size η^2: † = small effect; †† = medium effect; ††† = large effect; ns: Nonsignificant.

Differences between the groups of cyberbullies in the psychological adjustment variables

The *ANOVA* of the cyberbully group (Table 3) showed that non-cyberbullies had a higher academic ($F_{(2,1082)} = 6.40$, $p < .05$) and family self-concept ($F_{(2, 1082)} = 3.91$, $p < .05$) than severe cyberbullies (with a small effect size in both cases, $\eta^2 = .01$), and a higher physical self-concept ($F_{(2, 1082)} = 4.24$, $p < .05$) than moderate cyberbullies (with a small effect, $\eta^2 = .01$). With regard to perceived stress ($F_{(2, 1082)} = 9.68$ $p < .05$) and loneliness ($F_{(2, 1082)} = 6.67$, $p < .05$), the two groups of cyberbullies scored significantly higher than the non-cyberbullies, with a small effect size ($\eta^2 = .01$, in both cases). As for depression ($F_{(2, 1082)} = 20.61$, $p < .05$), severe cyberbullies had significantly more depressive symptomatology than moderate cyberbullies and the latter, in turn, had more depressive symptomatology than non-cyberbullies, with a small effect size ($\eta^2 = .04$). Non-cyberbullies also had significantly

less fear of negative evaluation ($F_{(2, 1082)} = 14.45$, $p < .05$) than moderate cyberbullies (small effect size, $\eta^2 = .03$). In life satisfaction, non-cyberbullies scored significantly higher than moderate cyberbullies, and moderate cyberbullies scored higher than severe cyberbullies ($F_{(2, 1082)} = 17.75$, $p < .05$), with a small effect size ($\eta^2 = .03$). Lastly, unlike cybervictims, cyberbullies' EI scores were nonsignificant.

In summary, the results indicate that the profile of severe cybervictims showed higher scores in perceived stress, loneliness, depression, and social anxiety, and lower scores in self-concept, life satisfaction, and EI. The profile of severe cyberbullies is noteworthy for its high scores in perceived stress, loneliness, and depression, and its low scores in self-concept and life satisfaction. In the case of cybervictims, the greatest differences were observed in the variables loneliness, depressive symptomatology, fear of negative evaluation, and life satisfaction. In the case of the cyberbully group, the effect size in all the variables was small.

Table 3. Psychological Adjustment Variables in Cyberbullies

	Non Cyberbullies		Moderate Cyberbullies		Severe cyberbullies		F	p
	M	SD	M	SD	M	SD		
Self-concept:								
Academic	5.94[a]	(1.82)	5.66	(2.00)	4.62[b]	(1.63)	6.40†	.00
Family	5.63[a]	(0.93)	5.55	(0.86)	5.08[b]	(1.08)	3.91†	.02
Physical	5.86[a]	(1.84)	5.53[b]	(1.83)	5.20	(1.90)	4.24†	.02
Social	5.73	(1.06)	5.67	(0.97)	5.22	(1.04)	2.44	*n.s.*
Perceived stress:	1.99[b]	(0.64)	2.16[a]	(0.68)	2.40[a]	(0.79)	9.68†	.00
Loneliness:	1.81[b]	(0.47)	1.90[a]	(0.48)	2.10[a]	(0.51)	6.67†	.00
Depression:								
Depressive Symptomatology	1.80[c]	(0.64)	2.00[b]	(0.61)	2.53[a]	(0.79)	20.61†	.00
Social Anxiety:								
Fear of negative assessment	2.19[b]	(0.83)	2.50[a]	(0.90)	2.53	(1.02)	14.45†	.00
Avoidance and social anxiety in new situations	2.58	(0.87)	2.70	(0.91)	2.42	(0.92)	2.34	*n.s.*

	Non Cyberbullies		Moderate Cyberbullies		Severe cyberbullies		F	p
	M	SD	M	SD	M	SD		
Avoidance and general social anxiety	1.86	(0.83)	1.94	(0.78)	2.10	(1.06)	1.53	*n.s.*
Life Satisfaction	3.40ᵃ	(0.84)	3.22ᵇ	(0.81)	2.35ᶜ	(0.93)	17.75†	.00
EI:								
Emotional Attention	3.24	(0.95)	3.40	(0.94)	3.07	(1.01)	2.87	*n.s.*
Emotional Clarity	3.36	(0.83)	3.34	(0.81)	3.24	(0.81)	0.27	*n.s.*
Emotion Regulation	3.43	(0.91)	3.35	(0.96)	3.05	(1.01)	2.05	*n.s.*

Note: M = mean; SD = Standard Deviation; F =Fisher-Snedecor F; Bonferroni Test = a > b > C Effect size η^2: † = small effect; †† = medium effect; ††† = large effect. *ns* = nonsignificant.

Discussion

The main objective of this work was to develop a psychological profile of cybervictims and cyberbullies in terms of sex and the categories of moderate and severe non-cyberbullies/cybervictims, in the adjustment variables analyzed: self-concept, perceived stress, loneliness, depressive symptomatology, social anxiety, life satisfaction, and EI. In line with other studies (Garaigordobil, 2011), the results obtained reveal differences in the psychological profile of individuals involved in situations of cyberbullying.

In fact, the cybervictims of this study present a more deteriorated family, physical, and social self-concept than do non-cybervictims. These results relating to family self-concept are similar to those found in previous research that confirmed the importance of the quality of family climate as a protective factor against violent behavior in the school (Jiménez, Estévez, & Murgui, 2014) and cybernetic context (Ortega-Barón et al., 2016), as it promotes a greater sense of security and emotional connection in families with adolescent children. The cybervictims of the present study showed a significantly lower level of physical-self concept than students who were not involved in cyberbullying situations, which shows that cyberbullying is a potent factor that decreases self-image and general self-confidence (Delgado, Gonzálvez, Vicent, Gomis-Selva, & Inglés, 2015). On another hand, cybervictims' lower social self-concept can be justified by the rejection they perceive from their peers, which enhances feelings of incompetence in their social relations (Álvarez, 2014).

In the academic self-concept dimension, severe bullies obtained the lowest scores, which is consistent with findings of other studies that claim that adolescent bullies often avoid committing to school activities (Avilés, 2010). In the present study, a deterioration of family and physical self-concept was also observed in severe bullies. Coinciding with previous research, bullies' behavior has been related to a family dimension lacking warm and safe affection (Navarro, 2014) and characterized by parents' rejection and criticism (León-del-Barco, Felipe-Castaño, Polo-del-Río, & Fajardo-Bullón, 2015). However, there are some discrepancies in the physical dimension. While some authors point out that violent behavior reinforces adolescent bullies' feelings of power and strength, as well as a positive physical self-concept (Marsh, Parada, Craven, & Finger, 2004), others warn that cyberbullies obtain significantly lower mean scores in physical self-

concept, which, as in the case of cybervictims, reveals the deterioration that cyberbullying causes in the involved adolescents' self-perception (Delgado et al., 2015).

In general, the lower scores in the self-concept dimensions for cybervictims and cyberbullies coincide with the study of Ildırım, Çalıcı, and Erdoğan (2017), which found positive correlations between negative global self-concept and cyberbullying and cybervictimization.

The results of this study show a parallel emotional maladaptation in cybervictims and cyberbullies with regard to the variables of perceived stress, feeling of loneliness, and depressive symptomatology. Both the victims and the severe bullies obtained higher scores in all three variables. In cybervictims, the high degree of perceived stress can be interpreted as a result of the harassment experienced (Cénat et al., 2014). This situation of social abuse and marginalization has also been associated with a greater sense of loneliness (Brewer & Kerslake, 2015; Ortega-Barón et al., 2016). In fact, the use of technological devices could be a tool to escape from isolation (Iranzo, 2017) because, in the adolescent stage, recognition and social acceptance are essential for psycho-emotional adjustment (Estévez et al., 2006), and this negative experience for their identity and general well-being can eventually turn into more depressive symptoms (Modecki et al., 2013). Thus, recent work has associated social isolation (Alonso & Romero, 2016) and psychological stress (Platt, Kadosh, & Lau, 2013) induced by cyberbullying as predictors of depression in adolescent cybervictims.

The severe cyberbullies of the present study also reported high perceived stress. Some authors argue that the stress suffered by cyberbullies could result from previously sustained tensions and frustrations, justifying cyberbullying as a means of vengeance or to cope with frustration (Alonso & Romero, 2016). The fact of not perceiving the expected social support from other classmates for their hostile cyber-behavior could arouse feelings of loneliness in bullies (Brewer & Kerslake, 2015). This sense of isolation and loneliness is associated with greater participation in violent behaviors (Crespo-Ramos, Romero-Abrio, Martínez-Ferrer, & Musitu, 2017) and could partially explain the situation of bullies' school-academic and family maladjustment, with an increased risk of depressive symptoms (Masten & Cicchetti, 2010).

Stress, loneliness, depressive symptomatology, and even the fears and anxiety in which adolescents involved in cyberbullying situations find themselves enmeshed, both in the

role of victims and of bullies, may be underlying the higher general life dissatisfaction shown by these adolescents in the present work and in other prior works (Navarro et al., 2015; Ortega-Barón et al., 2016).

Nevertheless, our results indicate that social anxiety is more widespread in cybervictims. Thus, severe cybervictims had higher scores in all three dimensions of social anxiety, indicating fear of others' negative evaluation, as well as of social situations in general, both new and habitual. Cyberbullies showed greater fear of others' negative evaluation, but they did not report anxiety in social situations in general. As was predictable and as previous investigations argue, due to their condition of abuse, social interactions arouse greater general anxiety in cybervictims, and this can lead to the avoidance of social contact (Navarro et al., 2012). Thus, these studies suggest that fear of negative evaluation and social avoidance could act as a cause or a consequence of cybervictimization. In their study with cyberbullies, Harman, Hansen, Cochran, and Lindsey (2005) associated bullies' social anxiety with a lack of social skills to interact with the peer group. This could lead them to resort to the cybernetic environment to escape from this anxiety because, according to our results, such anxiety is mainly based on the fear of others' negative evaluation.

Finally, our data also suggest that cybervictims have more deficits than cyberbullies in emotional attention and clarity, as well as in emotional regulation —all dimensions of the EI construct measured. A very interesting fact is that the cybervictims in general showed high emotional attention compared to the non-victims. This coincides with the findings in victims of traditional bullying (Nabuzoca et al., 2009) and in recent studies on cyberbullying (Beltrán-Catalán, Zych, Ortega-Ruiz, & Llorent, 2018), which conclude that the high attention and concentration on one's own emotional state requires a great investment of cognitive resources to analyze and understand one's feelings, in these cases, along with a worse emotion regulation to repair one's mood (hence, their general psychological distress) (Ortega et al., 2009). These deficits in the EI dimensions can act as a risk factor for appropriate psychological development (Extremera et al., 2018). Despite the importance of the study of EI in cybervictimization, the existing scientific literature is negligible.

On another hand, the controversy about bullies is equally evident, as is the lack of works in this regard. Some research has found significantly low levels of general EI in bullies (Fernández-González, et al., 2018; Inglés et al., 2014) and cyberbullies (Baroncelli & Ciucci, 2014; Eden, Heiman, & Olenik-Shemesh, 2016) although, in our analyses carried out

with *EI dimensions*, no differences between the group of cyberbullies and that of non-cyberbullies were found. Our results suggest that adolescents who assault through technological means are able to attend to, comprehend and manage their emotions normally. This result is in line with some authors' reports that, in cyberbullying, emotional processing may be more elaborate, more deliberate, and less spontaneous, unlike traditional bullying, where physical presence and the resulting emotional impact is more direct (Elipe, Ortega, Hunter, & Del Rey, 2012). More research is needed to examine EI and also problem-solving strategies, as evidence has been found that those involved in bullying—both traditional and cyberbullying—present more antisocial behaviors and aggressive conflict-resolution strategies (Garaigordobil, 2017).

In short, this study is a novel work that provides suggestive results about the psychological profile of cybervictims, but especially of cyberbullies, as there are very few investigations that have focused on examining the psychological adjustment of cyberbullies. Deepening our understanding of cyberbullying can help to develop more effective strategies and prevention and intervention programs for this growing problem in our societies, which is of great educational, clinical, and social relevance.

In spite of the fact that this work is pioneer in this area, it also has some limitations that should be addressed in future studies. On the one hand, the results obtained cannot be generalized to students of other educational levels like primary education schools, in which there are also problems of cyberbullying. In addition, the results may be biased due to the participants' social desirability, reflected in the responses to the self-report scales, although previous studies have confirmed the reliability and validity this type of instruments to measure high risk behaviors in adolescents (Buelga et al., 2015). It should be added that we did not perform a thorough analysis of the percentage of cyberbullies who are also cybervictims. Current studies are finding some overlap in the two roles. Lastly, the cross-sectional nature of the present study prevents the establishment of causal inferences related to bullying and cyberbullying and the emotional indicators analyzed. This limitation can be solved with longitudinal designs that help confirm the direction of the relations.

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