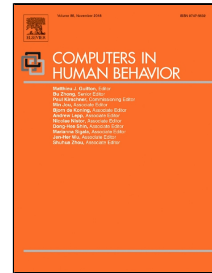


# Accepted Manuscript

Cyberbullying in the university setting. Relationship with family environment and emotional intelligence

María Carmen Martínez-Monteagudo, Beatriz Delgado, Cándido J. Inglés, José Manuel García-Fernández



PII: S0747-5632(18)30485-0

DOI: 10.1016/j.chb.2018.10.002

Reference: CHB 5734

To appear in: *Computers in Human Behavior*

Received Date: 05 May 2018

Accepted Date: 01 October 2018

Please cite this article as: María Carmen Martínez-Monteagudo, Beatriz Delgado, Cándido J. Inglés, José Manuel García-Fernández, Cyberbullying in the university setting. Relationship with family environment and emotional intelligence, *Computers in Human Behavior* (2018), doi: 10.1016/j.chb.2018.10.002

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Cyberbullying in the university setting. Relationship with family environment and emotional intelligence**

María Carmen Martínez-Monteagudo<sup>a</sup>, Beatriz Delgado<sup>b</sup>, Cándido J. Inglés<sup>c</sup>, and José Manuel García-Fernández<sup>e</sup>

<sup>a</sup> Department of Developmental Psychology and Didactic, Faculty of Education, University of Alicante, Carretera de San Vicente del Raspeig, s/n , 03080, Alicante, Spain. [maricarmen.martinez@ua.es](mailto:maricarmen.martinez@ua.es).

<sup>b</sup> Department of Developmental Psychology and Didactic, Faculty of Education, University of Alicante, Carretera de San Vicente del Raspeig, s/n , 03080, Alicante, Spain. [beatriz.delgado@ua.es](mailto:beatriz.delgado@ua.es).

<sup>c</sup> Department of Health Psychology, Area of Developmental and Educational Psychology, Miguel Hernández University of Elche, Avenida de la Universidad s/n. 03202, Elche, Spain. [cjingles@umh.es](mailto:cjingles@umh.es).

<sup>d</sup> Department of Developmental Psychology and Didactic, Faculty of Education, University of Alicante, Carretera de San Vicente del Raspeig, s/n , 03080, Alicante, [josemagf@ua.es](mailto:josemagf@ua.es).

**Declarations of interest:** none

**Funding:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Corresponding author:** María C. Martínez Monteagudo. Department of Developmental Psychology and Didactic. Faculty of Education. University of Alicante. Alicante, 03080, Spain. Phone: +0034 965903400; Fax: +0034 96 590 98 86; e-mail: [maricarmen.martinez@ua.es](mailto:maricarmen.martinez@ua.es)

Cyberbullying in the university setting. Relationship with family environment and emotional intelligence

Currently, the enormous quantity of research on cyberbullying during adolescence contrasts with those studies carried out in the university environment. The objective of this study was to analyze the predictive capacity of family environment and emotional intelligence with regard to cyberbullying in university students. The European Cyberbullying Intervention Project Questionnaire, the Social Climate in the Family Scale and the Trait Meta-Mood Scale-24 were administered to a sample of 1,282 university students (594 men and 688 women) between the ages of 18 and 46 ( $M = 21.65$ ;  $DT = 4.25$ ). The results revealed that a deteriorated family environment increases the probability of being both a victim and an aggressor of cyberbullying, whereas a favorable family environment decreases this probability. Likewise, the dimensions of emotional intelligence were predictive variables of participation as victims or aggressors of cyberbullying. The conclusions of this study are of special relevance given that they do not only bring about a problem that has a little knowledge of the university setting, but because they also note that intervention programs should consider the influence of the family environment during the early adulthood period, as well as the relevance of emotional level of these university students.

Keywords: cyberbullying; victims; aggressors; family environment; emotional intelligence; university students.

## 1. Introduction

Recently, there has been increasing concern over the maltreatment between peers taking place in new spaces, scenarios or virtual realities. The increasing and generalized use of the new information and communications technology (ICT) has led to new forms of school bullying or cyberbullying. Cyberbullying is defined as «a type of aggressive and intentional behavior that repeats frequently over time through the use, by an individual or group, of electronic devices, on a victim who cannot easily defend him/herself » (Smith et al., 2008, p. 376). Therefore, the bullies, belonging to this new generation having a mastery of the ICT, take advantage of the multiple resources that the technological advances offer them in order to carry out this aggressive behavior towards their peers. Multiple and varied means are used, including email, instant text messages, bribes, threats, the publication of confidential information, identity theft, the manipulation of photographs, the recording of physical aggressions that are later disseminated, etc.

Currently, the existence of cyberbullying in developed countries is estimated to even exceed the levels of traditional bullying (Buelga, Cava, Musitu, & Torralba, 2015). Although the prevalence of cyberbullying varies based on distinct factors, in general, scientific studies suggest an increase in its prevalence amongst youth between the ages of 12 and 14, decreasing over the later years of adolescence (Tokunaga, 2010). However, more and more studies are indicating ongoing cyberbullying, with a high percentage of cases, in the university environment, having prevalence rates of around 20% (Dilmac, 2009; Finn, 2004; Macdonald & Roberts-Pittman, 2010). Thus, Finn (2004) interviewed 2,002 US university students, finding that between 10 and 15% of them affirmed to having received repeated emails or instant messages with a threatening, insulting or aggressive content, and over half of the students had received unwanted pornography. Along the same lines, Dilmac (2009) found that 22.5% of the examined university students affirmed to having intimidated another student at least once and 55.3% reported to having been a victim of cyberbullying at least once in their life.

On the other hand, the enormous number of studies on traditional bullying and cyberbullying during adolescence contrasts with the limited number of works that have been carried out in the university setting. However, the few studies that do exist with university samples have revealed the negative impact of cyberbullying both in aggressors as well as in victims. So, recently, it has been found that university students who are victims of cyberbullying have high levels of anxiety, depression, stress, low self-esteem and self-efficacy, helplessness, irritability, loneliness, rage sleep disorders, difficulties in concentrating and absenteeism (Arıcak, 2016; Faucher, Jackson, & Cassidy, 2014; Schenk & Fremouw, 2012), and in the more extreme cases, even suicidal ideation (Schenk & Fremouw, 2012), whereas the aggressors reveal externalizing behaviors that are associated with a lack of empathy with the victims, aggressive behavior the consumption of drugs and absenteeism (Arıcak, 2009; Hinduja & Patchin, 2007). Similarly, the victims of cyberbullying have a high probability of abandoning their university studies, with the serious labor repercussions that this may imply (Myers & Cowie, 2017). Despite the serious consequences of cyberbullying in the university setting, few studies have considered its relationship with other personal and family variables. The high prevalence and negative effects of cyberbullying have mainly resulted in studies on the identification of potential predictors of this problem, in order to prevent and intervene in these behaviors. In general, aggressive behaviors result from the interaction between the student's individual characteristics and development contexts (Benbenishty & Astor, 2005), with family environment being a significant context. Thus,

distinct studies have highlighted the relationship between family environment and the involvement as both victims and aggressors, in violent acts (Matjasko, Needham, Grunden, & Feldman, 2010). Numerous studies have suggested that a family environment that supports cohesion, social support, confidence amongst its members and open and empathetic family communication provides resources that facilitate a child's social adjustment and the establishment of positive relationships with his/her peers, thereby contributing to prevent the child from being the object of cyberbullying or from participating in bullying behaviors (Estévez, Murgui, Musitu, & Moreno, 2008). Furthermore, it has been shown that family environment influences the attitude of the children with respect to social rules and behaviors, being directly related to school violence (López-Pérez, 2017). Likewise, in a positive family environment, the children tend to be more sensitive to the wishes and expectations of their parents, offering an indirect social control of the family with respect to the violation of rules, and, therefore, in the participation of children in acts of intimidation via the Internet (Pettit, Bates, & Dodge, 1997). On the other hand, a negative family environment with a lack of an affective and safe relationship, in which problems with communication, conflicts, limited parental availability, difficulty in establishing limits, permissiveness with regards to antisocial behavior and coercive punishment and authoritarian parenting styles predominate, favor a decrease in social resources, which may result in greater vulnerability to being bullied or intimidated by the child's peers or the tendency to be involved in violent acts (Ybarra & Mitchell, 2004). Likewise, empirical studies have highlighted an increased predisposition of children towards anti-social and violent behaviors if they have witnessed family or marital conflicts in their homes (Hawkins et al., 2000). An over-exposure to parental conflicts may cause children to behave in an aggressive manner in their everyday life, possible transferring this aggression to the virtual environments that may feel safer to them given their apparent anonymity and rapid dissemination (Tanrikulu & Campbell, 2015). On the other hand, a deteriorated family environment may cause children to devote more time to electronic devices in order to distance themselves from family conflicts or to make up for a lack of interpersonal relationships (Gomes-Franco & Sendín, 2014), which may lead to a greater predisposition and opportunity to commit intimidating acts over the Internet.

On the other hand, one of the personal characteristics that has been the most often considered in studies on school bullying is emotional intelligence (EI). Mayer and Salovey (1997) define EI as the ability to: (a) accurately perceive, assess and express emotions; (b) to access and generate feelings that facilitate thinking; (c) to understand emotions and emotional knowledge; and (d) to regulate emotions and promote emotional and intellectual growth. Thus, EI has generally been considered to be a protective factor against the appearance of problematic behaviors such as school bullying or cyberbullying (Elipe, Morán-Merchán, Ortega-Ruiz, & Casas, 2015). Empirical evidence suggests that both victims of cyberbullying as well as aggressors of the same tend to have a low level of emotional intelligence (Garaigordobil & Oñederra, 2010). Extremera and Fernández-Berrocal (2004) used a sample of adolescents to confirm that those students who were less likely to justify aggressive acts had greater skills in distinguishing their emotions (emotional understanding) and to repair negative emotions and prolong positive ones. Thus, emotional attention, understanding and regulation have been considered potential predictors of victimization (Schwartz, Proctor, & Chien, 2001). Victims of cyberbullying tend to pay excessive attention to feelings, but often lack the necessary skills to adequately understand and regulate their emotional experience (Hunter & Borg, 2006; Nabuzoka, Rønning, & Handegård, 2009). As for the cyberbullies, numerous studies suggest that they have a lack of empathy towards their victims and low levels of emotional intelligence. Liau, Liau, Teoh and Liau (2003) found that the students having the lowest emotional intelligence revealed higher levels of aggressive and delinquent behaviors. Along these lines,

Vásquez et al. (2010) using a sample of Colombian university students, found that the non-aggressors had adequate emotional intelligence as compared to the aggressors.

So, taking into account the fact that the study of cyberbullying in the university setting is relatively recent and given the limited research on individual and family based factors, it is relevant to offer predictive studies that may detect which factors may lead one to be a victim or an aggressor of cyberbullying, so as to create intervention programs that adjust to educational level, which may alleviate this problem. Therefore, the objective of this study focuses on analyzing the predictive power of the family environment and of EI in being a victim or an aggressor of cyberbullying in the university setting. Considering the prior empirical evidence, it is anticipated that family environment shall be predictive of being a victim or aggressor of cyberbullying (Hypothesis 1). Likewise, it is anticipated that the factors of EI shall be predictive variables for being either a victim or an aggressor of cyberbullying (Hypothesis 2).

## 2. Methodology

### 2.1. Participants

Convenience sampling was carried out on students from Spanish public and private universities of the Valencia community. The sample consisted of 1,328 university students aged from 18 to 46 ( $M = 21.65$ ;  $SD = 4.25$ ), of which 46 (3.5%) were excluded due to errors or omissions in their responses or because they did not wish to participate in the study. The final sample consisted of 1,282 students (594 men and 688 women), who were studying in 1<sup>st</sup> and 4<sup>th</sup> years of the Teaching Degree in Early Childhood Education ( $n = 319$ ), the Teaching Degree in Primary Education ( $n = 356$ ), the Psychology Degree ( $n = 220$ ), the Degree in Physical Activity and Sports Sciences ( $n = 203$ ) and the Degree in Business Administration and Management ( $n = 184$ ). The ethnic make up of the sample was as follows: 90.4% Spanish, 5.38% Latin Americans, 2.97% other Europeans, 0.73% Asians and 0.52% Arabs. The Chi-squared test of uniformity of frequency distribution was used to verify that there were no significant differences between the gender x year group ( $\chi^2 = 3.85$ ;  $p = .312$ ).

### 2.2. Instruments

*European Cyberbullying Intervention Project Questionnaire* (ECIPQ; Del Rey et al., 2015).

Cyberbullying was assessed using the Spanish version of the European Cyberbullying Intervention Project Questionnaire (Del Rey et al., 2015). It includes 22 items on two scales, *Cyber victimization* (11 items) and *Cyber aggression* (11 items) responding through a Likert like scale of 1 to 5 (1 = *never*; 2 = *once or twice*; 3 = *once or twice a month*; 4 = *once a week*; 5 = *more than once a week*). The items from the two scales refer to actions such as using offensive language, excluding or spreading rumors, identity theft, being excluded or ignored or image manipulation, all of which are carried out via electronic means and which took place over the past two months. The scale has revealed adequate internal consistency rates (Casas, Del Rey, & Ortega, 2013). In this study, the two subscales demonstrated sufficient reliability with Cronbach's alpha values of .85 (cyber victimization) and .76 (cyber aggression).

*Family Environmental Scale* (FES; Moos, Moos, & Trickett, 1987; Spanish adaptation by Fernández-Ballesteros & Sierra, 1989).

It consists of 90 items that are grouped into three factors: *Relationships*, *Development* and *Stability*. The *Relationships* factor assesses the degree of communication in the family and consists of three subscales: *Cohesion*, *Expressiveness* and *Conflict*. The *Development* factor assesses the importance of certain personal development processes on the family that may be strengthened or not by the family life. This factor consists of five subscales: *Autonomy*, *Performance*, *Intellectual-cultural*, *Social-recreational* and *Morality-religious*. The *Stability* factor assesses the structure and organization of the family as well as the level of control exercised by certain family members over others. The *Stability* factor combines two subscales: *Organization* and *Control*. The Spanish adaptation of the scale has revealed sufficient rates of reliability and validity (Fernández-Ballesteros & Sierra, 1989). In this study, the reliability (Cronbach's alpha) was .84 (*Relationships*), .79 (*Development*) and .88 (*Stability*).

*Trait Meta-Mood Scale-24* (TMMS-24; Fernández-Berrocal, Extremera, & Ramos, 2004).

To evaluate EI, a Spanish adaptation of the TMMS-48 scale created by Salovey, Mayer, Goldman, Turvey and Palfai (1995) was used. The Spanish version contains 24 items that are answered via a Likert like scale of 5 points (1 = *Completely disagree*; 5 = *Completely agree*). The items were distributed in three scales: *Emotional Attention* (attention that the individual pays to his/her emotions), *Emotional Understanding* (ability to understand, identify and label his/her affective states) and *Emotional Repair* (ability to regulate one's emotions). The original version of the validated scale (Fernández-Berrocal et al., 2004) presents satisfactory internal consistency rates (*Emotional Attention*,  $\alpha = .84$ ; *Emotional Understanding*,  $\alpha = .82$ ; *Emotional Repair*,  $\alpha = .81$ ). In this study, the reliability ( $\alpha$ ) was .87 for *Emotional Attention*, .84 for *Emotional Understanding* and .87 for *Emotional Repair*.

### 2.3. Procedure

An interview was conducted with the directors of the participating university departments in order to explain to them the objective of the study and to promote their collaboration. Questionnaires were collectively administered in the classroom, informing participants of the voluntary nature of their participation as well as the confidentiality of the results obtained. Researchers were present during the questionnaire administration in order to resolve any doubts and to emphasize that no questions should be left unanswered. The mean time for the administration of the questionnaires was 10 minutes for the ECIPQ, 20 minutes for the FES and 10 minutes for the TMMS-24. The ethics committee of the Universidad de Alicante approved the study. Likewise, all standards related to studies on humans were respected, in accordance with the ethical principles of the Helsinki Declaration.

### 2.4. Statistical analysis

To examine the predictive or classification capacity of the family social environment and of EI on cyberbullying, binary logistic regression analysis was performed in forward steps based on the Wald test. Logistic modeling permitted the estimation of what occurred in an event, action or result (e.g., being the victim of cyberbullying) in the presence of one or more predictors (e.g. EI). This probability is estimated via the odd ratio (OR) statistic. If the OR is greater than one, the independent variable is associated with an increase in the likelihood of the event, that is, in the probability that this event shall take place. On the other hand, if the OR is less than one,

an increase in the independent variable implies a decrease in the likelihood of the event or in the probability that it will occur. To carry out these analyses, the variables were dichotomized in: (a) not a victim: scores equal to or lower than the quantile 25 in the Cyber victimization subscale; (b) victim: scores equal to or higher than the quantile 75 in the Cyber victimization subscale; (c) not an aggressor: scores equal to or lower than the quantile 25 in the Cyber aggression subscale; and (d) aggressor: scores equal to or higher than the quantile 75 in the Cyber aggression subscale.

### 3. Results

#### 3.1. Frequency of cyber victimization and cyber aggression

First, the data indicates that 81.4% ( $n = 1,044$ ) of the students have never been victimized via electronic means, whereas 18.6% ( $n = 238$ ) noted having been victims of cyberbullying over the past two months through social media or email. On the other hand, 80.6% ( $n = 1,033$ ) affirm that they are not cyberbullies whereas 19.4% ( $n = 249$ ) declare that they have bullied a peer over the Internet during the past two months.

#### 3.2. Prediction of being a victim of cyberbullying based on family environment and EI

As for family environment, the model created to predict being a victim of cyberbullying in the total sample permits a correct estimation of 81.4% of the cases ( $\chi^2 = 45.549$ ;  $p = .001$ ) with the variables *Morality-Religiousness*, *Intellectual-Cultural Development*, *Cohesion*, *Expressiveness* and *Conflict* forming a part of the prediction equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is situated at .057. The OR of the logistic model indicates that students presented: (a) 22% and 25% more probability of being the victim of cyberbullying for each unit increase in the *Morality-Religiousness* and *Conflict* scale, respectively and (b) 16%, 14% and 14% less probability of being a victim of cyberbullying with each unit increase in the *Intellectual-Cultural Development*, *Cohesion* and *Expressiveness* scales, respectively (see Table 1).

Table 1. Results derived from the binary logistic regression for the probability of being a cyber victim based on family environment

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Intellectual-Cultural Development	-0.22	0.05	23.30	.000	0.84	1.14-1.35
Morality-Religiousness	0.20	0.05	16.73	.000	1.22	1.11-1.34
Cohesion	-0.17	0.05	11.97	.000	0.86	0.81-0.98
Expressiveness	-0.15	0.04	11.90	.001	0.86	0.80-0.94
Conflict	0.22	0.05	17.88	.000	1.25	1.13-1.38
Constant	-3.60	0.44	67.93	.000	0.03	

Note. *B* = coefficient; *S.E.* = standard error; *p* = probability; *OR* = odds ratio; *C.I.* = confidence interval at 95%.



As for EI, the logistic regression model created to predict being a victim of cyberbullying permits a correct estimation of 81.4% of the cases ( $\chi^2 = 17.155$ ;  $p = .001$ ) with the variables *Attention*, *Understanding* and *Repair* coming to form a part of the equation. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is situated at .072. The OR of the logistic model indicates that the students have a 3% greater probability of being a victim of cyberbullying for each one unit increase in the *Attention* scale, however students have a 4% and 6% lower probability of being a victim of cyberbullying with each one unit increase in the scales of *Understanding* and *Repair*, respectively (see Table 2).

Table 2. Results derived from the binary logistic regression for the probability of being a cyber victim based on EI

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Attention	0.03	0.01	5.80	.016	1.03	1.01-1.05
Understanding	-0.04	0.01	8.56	.003	0.96	0.94-0.99
Repair	-0.04	0.01	10.56	.001	0.94	1.02-1.06
Constant	-2.14	0.34	40.39	.000	0.12	

Note. *B* = coefficient; *S.E.* = standard error; *p* = probability; *OR* = odds ratio; *C.I.* = confidence interval at 95%.

### 3.3. Prediction of being a cyberbully with respect to family environment and EI

As for family environment, the model created to predict being a cyberbully permits the correct estimation of 80.6% of the cases ( $\chi^2 = 22.980$ ;  $p = .000$ ) with the following predictor variables forming a part of the equation: *Organization*, *Cohesion*, *Expressiveness* and *Family Conflict*. The adjustment value (Nagelkerke's  $R^2$ ) of the predictive model is situated at .042. The OR ratio of the logistic model indicates that the Students have a 22% greater probability of being a cyberbully for each one unit increase in the Conflict factor and a 12%, 15% and 11% lower probability of being a cyberbully for each one unit increase in the *Organization*, *Cohesion* and *Expressiveness* scale, respectively (see Table 3).

Table 3. Results derived from the binary logistic regression for the probability of being a cyberbully based on family environment

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Organization	-0.10	0.05	4.44	.035	0.88	1.00-1.21
Cohesion	-0.09	0.05	3.52	.006	0.85	0.99-1.20
Expressiveness	-0.12	0.04	7.29	.007	0.89	0.82-0.97
Conflict	0.12	0.03	7.28	.005	1.22	1.03-1.22
Constant	-1.95	0.47	17.53	.000	0.143	

Note. *B* = coefficient; *S.E.* = standard error; *p* = probability; *OR* = odds ratio; *C.I.* = confidence interval at 95%.

As for EI, the data has allowed for the creation of a logistic regression model that permits the creation of correct estimates with respect to the probability of being a cyberbully based on the scores obtained on EI. The proposed model permits the correct estimate of 80.6% of the cases ( $\chi^2 = 41.570$ ;  $p = .000$ ). The OR indicates that university students are 7% less likely to be aggressors for each one unit increase in the *Understanding* scale (see Table 4).

Table 4. Results derived from the binary logistic regression for the probability of being a cyberbully based on EI

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>p</i>	<i>OR</i>	<i>CI 95%</i>
Understanding	-0.07	0.01	38.02	.000	0.93	0.91-0.95
Constant	-0.56	0.29	3.70	.005	0.57	

Note. *B* = coefficient; *S.E.* = standard error; *p* = probability; *OR* = odds ratio; *C.I.* = confidence interval at 95%.

#### 4. Discussion and conclusions

The objective of this study was to analyze the relationship between family atmosphere and EI with respect to cyberbullying, in both victims as well as aggressors of the university setting. Most studies have corroborate the close relationships existing between personal and family variables and traditional school bullying, however there have been few studies that refer specifically to cyberbullying. Similarly, it is even more difficult to find studies on cyberbullying in the university setting. This study attempts to address this situation, assessing the predictive capacity of personal and family based variables on cyberbullying.

First, it should be noted that the results of this study reveal that 18.6% of the sample of students that were analyzed referred to having suffered from cyberbullying by their peers over the past two months and 19.4% declared that they had engaged in some cyberbullying behavior with their peers. This data coincides with that found in prior studies that have found a similar prevalence in a university sample (Dilmac, 2009; Finn, 2004). On the other hand, the data has confirmed that specific family variables are predictors of cyberbullying both regarding victims as well as bullies, supporting hypothesis 1 of this study. Thus, the results reveal that there is a greater probability of being a victim as *Morality-Religiousness* and *Conflict* increase in the family nucleus, while the probability of being a victim is lower when there is an increased *Intellectual-Cultural Development*, *Expressiveness* and *Cohesion* in the family environment. These results are in line with those from other studies that have highlighted how a deteriorated family environment may become a risk factor for being victimized, while the quality of the relationships between the family members protects the student from possible victimization by his/her peers (Estévez et al., 2008) since he/she will have family resources that may act as a protective factor against cyberbullying. More specifically, many studies have found that a high level of family conflict may act as a vulnerability factor for being bullied via digital media (Ortega-Barón, Buelga, & Cava, 2016), and distinct studies have found that the cyberbullying victims have less family cohesion and expressiveness than those who are not victims (Ortega-Barón et al., 2016). In fact, this study finds that the degree to which the student perceives the existence of commitment and mutual support between family members (*Cohesion*) and the perception regarding the degree to which family members freely express their

feelings (*Expressiveness*) act as a protective factor against cyber victimization. As for the *Morality-Religiousness* factor, although there are currently no conclusive studies, some research has found relationships between religiousness and bullying and cyberbullying. Abbotts, Williams, Sweeting and West (2004) found that youth who frequently attend mass were more likely to suffer from bullying. Along these lines, Garaigordobil, Martínez-Valderrey, Páez and Cardozo (2015) found that in the religious centers, there was more bullying and cyberbullying behavior than in the non-religious centers. However, other studies have not found significant relationships between the degree of religiousness and cyberbullying (Fu, Land & Lamb, 2013), thus more in depth studies are necessary on this variable. On the other hand, *Intellectual-Cultural Development* has also acted as a protective factor against cyberbullying, coinciding with other studies that affirm that those families paying special attention to the education and intellectual development of their children increase the protective factors that may prevent school violence situations (Lee & Kim, 2000). In conclusion, it appears that a good family environment may permit functional models of social relations that children may transfer to other development contexts (Espegale & Swearer, 2009).

As for the aggressors, the data from this study has confirmed that the probability of being a cyberbully is greater when there is an increase in the level of family *Conflict* with said probability decreasing when the level of *Organization, Cohesion* and *Expressiveness* increases in the family environment. This data coincides with that from other studies that have associated cyberbullying with a deteriorated family environment while, on the other hand, the quality of the relationships between family members protects students from participation in violent behavior amongst peers (Estévez et al., 2008). López-Pérez (2017) using a sample of 512 Mexican university students, found that cyberbullies belonged to families in which: (1) little attention was paid to the family members, with no strong feeling of unity (low *Cohesion*); (2) members were less likely to share their personal problems, spoke little about their feelings or in which the family members did not disclose their desires, frequently keeping in their feelings (low *Expressiveness*); and (3) there were constant conflicts and criticism between members (high *Conflict*). According to De la Torre, García, Villa and Casanova (2008), aggressors tend to have hostile relationships with their parents and difficulties in respecting rules, with this type of behavior transferring to the scholastic setting. When considering the results, it appears evident that the family plays a relevant role both as a protective and a vulnerability factor for participation in cyberbullying, offering adaptive or maladaptive resources and transmitting rules and guidelines of behavior that may be generalized and transferred from the family setting to the school environment. In fact, some studies suggest that the occurrence of cyberbullying in the university setting may be due to the fact that the students are following very well established family behavior patterns (López-Pérez, 2017).

On the other hand, the dimensions of EI have also been found to be predictor variables for participation as victims or aggressors of cyberbullying, as hypothesis 2 suggests. The data has revealed that the probability of being a victim is greater when the *Attention* paid to one's feelings increases, whereas said probability decreases when the level of emotional *Understanding* and *Repair* increases. Although the percentages obtained in this study were not very high (probabilities ranging between 3 and 7%), the data is in line with that from other studies that have corroborated that victims have greater levels of attention to feelings and lower levels of emotional understanding and repair (Hunter & Borg, 2006; Nabuzoka et al., 2009). So, it appears that paying excessive attention to one's feelings without having the capacity to understand and regulate them may be detrimental to an individual's social adjustment. When students pay excessive attention to recognizing their emotions, an increase in rumination may occur as well as a poorer social functioning (Extremera & Fernández-Berrocal, 2004). On the other hand, emotionally intelligent students, that is, those with a greater capacity to

perceive, understand and regulate their own emotions and those of others, have the resources necessary to tackle stressful classroom events. Thus, the student's capacity to regulate his/her emotions will help take on potentially problematic situations related to cyberbullying. These situations (mocking, intimidation, threats, etc.) may lead to negative emotions in the student, but if he/she is capable of understanding and regulating them adequately, stress levels may be reduced and they may be successfully tackled. So, for example, in the face of rage or frustration that may lead to being insulted or humiliated via electronic means, students with a high level of emotional understanding and regulation may use these to modify or regulate their affective states and demonstrate an assertive and even tempered state that permits them to handle said problematic situations. On the other hand, regarding the aggressors of cyberbullying, the data from this study has revealed that the probability of being an aggressor decreases as the student's emotional *Understanding* increases. Thus, the protective role of emotional *Understanding* of oneself and others is corroborated to prevent participation in bullying behaviors. A greater understanding of emotions helps students to feel a greater level of empathy towards their peers, which may drastically reduce their involvement in intimidating behaviors. In general, this data supports the studies that consider EI to be a protective variable against bullying and cyberbullying (Elipe et al., 2015; Extremera & Fernández-Berrocal, 2004; Garaigordobil & Onederra, 2010; Liao et al., 2003; Vásquez et al., 2010).

Finally, there are certain limitations of this study that should be considered. Its cross-sectional design does not permit the establishment of causality between the different variables, therefore, it is recommended that in the future, longitudinal studies be conducted. On the other hand, the measurement of the variables has been carried out based solely on self-reporting, which may result in bias and social desirability, thus it is recommended that other complementary assessment measures be used. Likewise, the scarcity of studies carried out on cyberbullying in the university environment may hinder the comparison of the results obtained. Despite these limitations, the results of this study are of special relevance given that they highlight the fact that part of the problem of cyberbullying in the university setting may depend on the quality of the student's family relationships and EI level. These are variables that have yet to receive much attention from the scientific field. Thus, the family is seen to play a relevant role as a protective factor from cyberbullying, even in a university setting, controlling the behavior of its members and the use of the new technologies. Similarly, EI acts as a protective factor to prevent students from being victims as well as aggressors, highlighting the fundamental role exercised by emotional regulation in students. Thus, it is corroborated that both variables are relevant factors to be taken into consideration when developing social and educational policies, and when developing intervention programs to alleviate this problem.

## References

- Abbotts, J. E., Williams, R. G. A., Sweeting, H. N., & West, P. B. (2004). Is going to church good or bad for you? Denomination, attendance and mental health of children in West Scotland. *Social Science & Medicine*, 58(3), 645–656. doi: [http://dx.doi.org/10.1016/S0277-9536\(03\)00283-1](http://dx.doi.org/10.1016/S0277-9536(03)00283-1)
- Aricak, O. T. (2009). Psychiatric symptomatology as a predictor of cyberbullying among university students. *Eurasian Journal of Education Research*, 34, 167-184.
- Aricak, O.T. (2016). The relationship between mental health and bullying. En H. Cowie, C. A. Myers (Eds.), *Bullying among university students: Cross-national perspectives* (pp. 76-90). Abingdon: Routledge.

- Benbenishty, R., & Astor, R. A. (2005). *School violence in context: Culture, neighborhood, family, school, and gender*. New York: Oxford University Press.
- Buelga, S., Cava, M. J., Musitu, G., & Torralba, E. (2015). Cyberbullying aggressors among Spanish secondary education students: An exploratory study. *Interactive Technology and Smart Education, 12*, 100-115. doi: <http://dx.doi.org/10.1108/ITSE-08-2014-0025>
- Casas, J.A., Del Rey, R., & Ortega-Ruiz, R. (2013). Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior, 29*, 580-587. doi: <http://dx.doi.org/10.1016/j.chb.2012.11.015>
- De la Torre, M., García, Villa, M., & Casanova, P. (2008). Relaciones entre violencia escolar y autoconcepto multidimensional en adolescentes de Educación Secundaria Obligatoria. [Relationships between school violence and multidimensional self-concept: Teenagers from the Obligatory Secondary Education]. *European Journal of Education and Psychology, 1*(2), 57-70.
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze, A., Scheithauer, H., Smith, P., ... & Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior, 50*, 141-147. doi: <http://dx.doi.org/10.1016/j.chb.2015.03.065>
- Dilmac, B. (2009). Psychological needs as a predictor of cyberbullying: A preliminary report on college students. *Educational Sciences: Theory & Practice, 9*(3), 1307-1325. doi: <http://dx.doi.org/10.1080/15388220.2011.630310>.
- Elipe, P., Moran-Merchán, J. A., Ortega-Ruiz, R., & Casas, J. A. (2015). Perceived emotional intelligence as a moderator variable between cybervictimization and its emotional impact. *Frontiers in Psychology, 6*, 1-11.
- Espigale, D., & Swearer, S. (2009). Contributions of three social theories to understanding bullying perpetration and victimization among school-aged youth. En M. Harris (Ed.), *Bullying, rejection & peer victimization. A social cognitive neuroscience perspective* (pp. 151-170). New York: Springer.
- Estévez, E., Murgui, S., Musitu, G., & Moreno, D. (2008). Adolescent aggression: Effects of gender and family and school environments. *Journal of Adolescence, 31*, 433-450.
- Extremera, N., & Fernández-Berrocal, P. (2004). El papel de la inteligencia emocional en el alumnado: evidencias empíricas. [The role of students' emotional intelligence: Empirical evidence]. *Revista Electrónica de Investigación Educativa, 6*(2).
- Faucher, C., Jackson, M., & Cassidy, W. (2014). Cyberbullying among university students: Gendered experiences, impacts, and perspectives. *Education Research International, 2014*, Article ID 698545, 10 pages. doi: <http://dx.doi.org/10.1155/2014/698545>
- Fernández-Ballesteros, R. & Sierra, B. (1989). *Escalas de Clima Social FES, WES, CIES y CES*. Madrid: TEA Ediciones.
- Fernández-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of Spanish modified version of the Trait Meta-Mood Scale. *Psychological Reports, 94*, 751-755. doi: <http://dx.doi.org/10.2466/pr0.94.3.751-755>
- Finn, J. (2004). A survey of online harassment at a university campus. *Journal of Interpersonal Violence, 19*(4), 468-481. doi: <http://dx.doi.org/10.1177/0886260503262083>

- Fu, Q., Land, K. C., & Lamb, V. L. (2013). Bullying victimization, socioeconomic status and behavioral characteristics of 12th graders in the United States, 1989 to 2009: Repetitive trends and persistent risk differentials. *Child Indicators Research*, 6(1), 1-21. doi: <http://dx.doi.org/10.1007/s12187-012-9152-8>
- Garaigordobil, M., Martínez-Valderrey, V., Páez, D., & Cardozo, G. (2015). Bullying y ciberbullying: Diferencias entre colegios públicos-privados y religiosos-laicos. [Bullying and cyberbullying: Differences between public-private and religious-secular schools]. *Pensamiento Psicológico*, 13(1), 39-52. doi:10.11144/Javerianacali.PPSI13-1.bcdc
- Garaigordobil, M., & Oñederra J. A. (2010). *La violencia entre iguales: Revisión teórica y estrategias de intervención*. Madrid: Pirámide.
- Gómez-Franco, F., & Sendin, J. C. (2014). Internet como refugio y escudo social: Usos problemáticos de la red por jóvenes españoles. [Internet as a haven and social shield. Problematic uses of the network by young Spaniards]. *Comunicar*, (43), 45-53.
- Hawkins J. D., Herrenkohl, T. I., Farrington, D. P., Brewer, D., Catalano, R. F., Harachi, T. W., & Cothorn, L. (2000). *Predictors of youth violence*. Washington DC: The Office of Juvenile Justice and Delinquency Prevention.
- Hinduja, S., & Patchin, J. (2007). Offline consequences of online victimization. *Journal of School Violence*, 6, 89-112. doi: [http://dx.doi.org/10.1300/J202v06n03\\_06](http://dx.doi.org/10.1300/J202v06n03_06)
- Hunter, S. C., & Borg, M. G. (2006). The influence of emotional reaction on help seeking by victims of school bullying. *Educational Psychology*, 26, 813-826.
- Lee, S., & Kim, M. (2000). A study of correlation between the alienating behaviors of the youth and domestic factors. *Journal of Research*, 27, 315-334.
- Liau, A. K., Liau, A. W. L., Teoh, G. B. S., & Liau, M. T. L. (2003). The case for emotional literacy: The influence of emotional intelligence on problem behaviours in Malaysian secondary school students. *Journal of Moral Education*, 32(1), 51-66.
- López-Pérez, M. G. (2017). Influencia del clima escolar y familiar en el acoso escolar y cibernético de universitarios. [Influence of school and family climate on bullying and cyberbullying of university students]. *Revista Mexicana de Investigación en Psicología*, 9(1), 31-44.
- MacDonald, C. D., & Roberts-Pittman, B. (2010). Cyberbullying among college students: Prevalence and demographic differences. *Computers in Human Behavior*, 9, 2003-2009. doi: <http://dx.doi.org/10.1016/j.sbspro.2010.12.436>
- Matjasko, J. L., Needham, B. L., Grunden, L. N., & Feldman, A. (2010). Violent victimization and perpetration during adolescence: Developmental stage dependent ecological models. *Journal of Youth and Adolescence*, 39(9), 1053-1066. doi: <http://dx.doi.org/10.1007/s10964-010-9508-7>
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? En P. Salovey & D. Sluyter (Eds.), *Emotional intelligence and emotional intelligence: Educational implications* (pp. 3-31). New York: Perseus Books Group.
- Moos, R. M., Moos, B. S., & Trickett, E. J. (1984). *FES, WES y CES. Escalas de clima social*. Madrid: TEA Ediciones.
- Myers, C. A., & Cowie, H. (2017). Bullying at university: The social and legal contexts of cyberbullying among university students. *Journal of Cross-Cultural Psychology*, 48(8), 1172-1182. doi: <http://dx.doi.org/10.1177/0022022116684208>

- Nabuzoka, D., Rønning, J. A., & Handegård, B. H. (2009). Exposure to bullying, reactions and psychological adjustment of secondary school students. *Educational Psychology, 7*, 849-866. doi: <http://dx.doi.org/10.1080/01443410903326613>
- Ortega-Barón, J., Buelga, S., & Cava, M. J. (2016). Influencia del clima escolar y familiar en adolescentes, víctimas de ciberacoso. [The influence of school climate and family climate among adolescents victims of cyberbullying]. *Comunicar, (46)*, 57-65.
- Pettit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child Development, 68*, 908-923. doi: <http://dx.doi.org/10.2307/1132041>
- Salovey, P., Mayer, J. D., Goldman, S., Turvey, C., & Palfai, T. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Mood Scale. En J. W. Pennebaker (Ed.), *Emotion, Disclosure and Health* (pp. 125-154). Washington, DC: American Psychological Association.
- Schenk, A. M., & Fremouw, W. J. (2012). Prevalence, psychological impact, and coping of cyberbully victims among college students. *Journal of School Violence, 11*(1), 21-37. doi: <http://dx.doi.org/10.1080/15388220.2011.630310>
- Schwartz, D., Proctor, L. J., & Chien, D. H. (2001). The aggressive victim of bullying: Emotional and behavioural dysregulation as a pathway to victimization by peers. En J. Juvonen y S. Graham (dirs.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 147-174). Nueva York: Guilford.
- Smith, P., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*(4), 376-385. doi: <http://dx.doi.org/10.1111/j.1469-7610.2007.01846.x>
- Tanrikulu, I., & Campbell, M. (2015). Correlates of traditional bullying and cyberbullying perpetration among Australian students. *Children and Youth Services Review, 55*, 138-146. doi: <http://dx.doi.org/10.1016/j.childyouth.2015.06.001>
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*(3), 277-287. doi: <http://dx.doi.org/10.1016/j.chb.2009.11.014>
- Vásquez, F., Ávila, N., Marqués, L., Martínez, G., Mercado, J., & Severiche, J. (2010). Inteligencia emocional e índices de bullying en estudiantes de psicología de una universidad privada de Barranquilla, Colombia. [Emotional intelligence and bullying rate in students of psychology at a private university in Barranquilla, Colombia]. *Psicogente, 13*(24), 306-328.
- Ybarra, M. L., & Mitchell, K. J. (2004). Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry, 45*, 1308-1316. doi: <http://dx.doi.org/10.1111/j.1469-7610.2004.00328.x>

**Highlights**

Cyberbullying also takes place in the university setting.

18.6% have been victims of cyberbullying /19.4% declare to have been cyberbullying aggressors.

Family atmosphere and emotional intelligence influence cyberbullying.

ACCEPTED MANUSCRIPT