Analyzing relationships among online emotional content, social and emotional competencies and cyberbullying

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Abstract

Social and emotional competencies have gained importance given their relation with high prosocial behavior and low violence. Social Networking Sites have become a key context for adolescents' interpersonal relationships. Thus, it could be useful to discover if social and emotional competencies are expressed differently when using electronic devices and if their expression, together with the use of emotional content online, are related to cyberbullying. The aim of this study was to explore the relations among social and emotional competencies, emotional content online, cybervictimization, and cyberperpetration. A descriptive cross-sectional study was carried out with a representative sample of 2,114 Andalusian adolescents (50.9% girls; $M_{age=}$ 13.79 years old, *SD*= 1.40). Results showed that a high level of social and emotional competencies were negatively related to cybervictimization and cyberperpetration, and to more use of emotional content online. Using more emotional content online was related to more cybervictimization and cyberperpetration. Also having a high level of social and emotional competencies protected against cyberbullying, but an excessive use of emotions online was a risk factor. Insights for the development of future interventions including emotional management online and promotion of positive online interaction are highlighted.

Key words: emotions online; cyberbullying; social competencies; emotional competencies; risk and protective factors

1. Introduction

Technologies are in constant development. Increased use of technologies is a new and potent socialization scenery (Amichai-Hamburger, Kingsbury, & Schneider, 2013), especially among adolescents and youth (Rosenberg et al., 2018). Interpersonal relationships are established and maintained (Ortega-Ruiz, Casas, & Del Rey, 2014) through social networks, electronic mails and chats. Young people were even called digital natives (Prensky, 2005), net generation (Oblinger & Oblinger, 2005), the Dot.com Generation (Stein & Craig, 2000), Google generation or millennials (Howe & Strauss, 2000) because of their use of information and communication technologies. Thus, technologies are a crucial context within youth lifes (Gibbons, 2007).

Interpersonal interactions carried out in cyberspace present both opportunities and risks (Best, Manktelow, & Taylor, 2014). Both the Internet and online social networks might be used in an inadequate way in adolescent population (Dinev & Hart, 2004; Echeburúa & Corral, 2009; Nasaescu, Marín-López, Llorent, Ortega-Ruiz, & Zych, 2018; Ortega, Calmaestra, & Mora-Merchán, 2008; Sorrentino, Baldry, Farrington, & Blaya, 2019). Cyberbullying is a harmful problem behavior that occurs online (Olweus, 2012; Smith, 2015), defined as an intentional aggression repeated in time, perpetrated through electronic devices. Cyberbullying can be inflicted by an individual or a group of people against another individual who becomes a victim and cannot protect himself or herself easily (Smith, Mahdavi, Carvalho, & Tippett, 2006).

Cyberbullying shares some characteristics of face-to-face bullying and it also has some unique characteristics (Ortega et al., 2008; Rigby & Smith, 2011; Smith et al., 2006). Given that cyberaggression has no spatial nor temporal limits (Kowalski & Limber, 2007; Raskauskas & Stoltz, 2007), victims cannot feel safe even in their closest family context. Cyberbullying might have a large number of bystanders because the aggressive act might be reproduced many times since it can persist online for an unlimited time. Cyberperpetrators might remain anonymous and distant, and they do not usually witness the effects of their conduct (Pettalia, Levin, & Dickinson, 2013). A cybervictim may never discover the identity of the cyberperpetrator which might cause additional distress (Mishna, Saini, & Solomon, 2009; Ybarra, Espelage, & Mitchell, 2007). Detection of cyberaggresion by parents and teachers can be more difficult compared to

face-to-face aggression. These characteristics of cyberbullying could cause a high impact on emotional development and wellbeing of those who suffer it.

Findings regarding sex differences in cyberbullying are inconsistent. Some authors found that boys tend to be more involved as cyberbullies (Huang & Chou, 2010; Sourander et al., 2010; Wachs, 2012) and cybervictims (Huang & Chou, 2010; Erdur-Baker, 2010). Other authors reported that girls are more likely to be involved as cyberbullies (Smith et al., 2008) or cybervictims (Ackers, 2012; Brighi, Guarini, Melotti, Galli, & Genta, 2012; Campbell, Spears, Slee, Butler, & Kift, 2012; Navarro & Jasinski, 2012; Olenik-Shemesh, Heiman, & Eden, 2012; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009; Smith et al., 2008; Sourander et al., 2010). Also, some studies showed no significant sex differences regarding cyberperpetration (Ackers, 2012; Hinduja & Patchin, 2008; Slonje & Smith, 2008) or cybervictimization (Hinduja & Patchin, 2008; Slonje & Smith, 2008). Such variability could be a result of the different measurement instruments used; hence, it is important to use high quality instruments when measuring cyberbullying and comparing genders (Whittaker & Kowalski, 2015).

1.1. Social and Emotional Competencies and cyberbullying

Although the number of studies regarding cyberbullying has increased in the last decades, there are still gaps in knowledge regarding its possible risk and protective factors. Social and emotional competencies are defined as emotional skills and knowledge effectively applied in prosocial interpersonal interactions and relationships (Gómez-Ortiz, Romera, & Ortega-Ruiz, 2017) including expression, perception, understanding, and management of emotions (Fernández-Berrocal, Cabello, & Gutiérrez-Cobo, 2017). Thus, social and emotional competencies consist of applying knowledge, skills and attitudes to comprehend and manage one's own emotions and the emotions of others, while being empathetic to build and maintain desirable interpersonal relationships and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning, 2015). Relations between high levels of social and emotional competencies and low levels of aggressive and antisocial behavior have been found by several meta-analyses (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011; Sklad, Diekstra, Ritter, Ben, & Gravesteijn, 2012) and by narrative reviews (Zych, Farrington, Llorent, & Ttofi, 2017).

Relations between social and emotional competencies and cyberbullying still need to be studied (Zych et al., 2017). Regarding perpetrators of bullying, while some authors describe them as socially incompetent, other authors claim that they are socially skillful and manipulative. Sutton, Smith, and Swettenham (1999a) suggested that bullies understand correctly social situations and cues, and they know how to use them to manipulate their peers in their own advantage. An empirical study based on a set of stories found that perpetrators have a good understanding of emotions and thoughts (Sutton, Smith, & Swettenham, 1999b). Nevertheless, Crick and Dodge (1999) argued that aggressive and delinquent behaviors are considered socially incompetent by definition. In general, authors agree that perpetrators do not apply their social skills in a prosocial way. More research is needed to discover if cyberbullying can be perpetrated through a socially skillful manipulation.

Social and emotional competencies protect children from the involvement in cyberbullying (Busch, Laninga-Wijnen, van Yperen, Schrijvers, & De Leeuw, 2015; Cook, Williams, Guerra, Kim, & Sadek, 2010). Arce, Fariña and Vázquez (2011) found a negative relationship between aggression and social competence. Low social competence and prosocial relationships were found in bullies (Arsenio & Lemerise, 2001). Gómez-Ortiz, Romera and Ortega-Ruiz (2017) found lower social adjustment and social efficacy in bullies, victims and bully-victims in comparison to the uninvolved students. They also found lower prosocial behavior in bullies and bully-victims than in uninvolved students.

Different studies showed that bullying and cyberbullying are strongly related (Del Rey, Elipe, & Ortega-Ruiz, 2012; Waasdorp & Bradshaw, 2015) but it is yet to be studied if there is also an overlap among risk and protective factors such as social and emotional competencies and emotional perception, expression, use and regulation online and offline. Romera, Cano, García-Fernández and Ortega-Ruiz (2016) found that cyberbullies and cyberbully-victims presented lower self-perceived social competence compared to victims and uninvolved students. A strong and inverse relation between normative adjustment and involvement in cyberbullying was also found (Romera, Herrera-López, Casas, Ortega-Ruiz, & Gómez-Ortiz, 2017). Schoffstall and Cohen (2011) discovered the relation between social incompetence and computer-mediated aggressive behavior.

Studies regarding social competence and cyberbullying using intervention programs found that improving social competence decreases cyberbullying (Garaigordobil & Martínez-Valderrey, 2014; Gradinger, Yanagida, Strohmeier, & Spiel, 2016). Navarro, Yubero, Larrañaga, and Martínez (2012) found lower levels of social competence in cybervictims. Low perceived social self-efficacy was associated with cybervictimization, proving the victims' difficulty to engage in satisfying and desirable relationships (Navarro et al., 2012). Peer and emotional difficulties are related to the involvement in both bullying and cyberbullying victimization (Goldbaum, Craig, Pepler, & Connolly, 2003; Kaltiala-Heino, Fröjd, & Marttunen, 2010; Lester & Cross, 2015; Lester, Cross, Dooley, & Shaw, 2013). Only a small percentage of students reported being 'only cyberbullied' (Cross, Lester, & Barnes, 2015; Raskauskas & Stoltz, 2007) and it still needs to be discovered if these emotional difficulties are related to cybervictimization and bullying victimization.

Many studies showed gender differences in social and emotional competencies. Elias and Haynes (2008) reported significantly higher social and emotional competencies in girls than boys in third grade. There is a tendency for adolescent girls to score higher than boys in social and emotional understanding (Brackett, Mayer, & Warner, 2004; Jaffee & Hyde, 2000; Welsh, Parke, Widaman, & O'Neil, 2001). Rose and Asher (1999) reported that girls reacted in a more prosocial way than boys when hypothetical conflict scenarios were presented to them. Sandstrom and Cillessen (2003) found that girls responded in a more competent way regarding social and emotional competencies. Moreover, Charbonneau and Nicol (2002) found that girls have greater perspective taking and empathic concern levels than boys. Thus, it is important to take gender into account when studying the relation between social and emotional competencies and other variables such as cybervictimization or cyberperpetration to understand if gender difference in social and emotional competencies predict gender differences in cyberbullying.

1.2. Emotional Content online and its relation to cyberbullying

Emotions have important social functions (Parkinson, 1996) and influence the behavior of those experiencing the emotion and the behavior of other people (Levenson, 1994). At the interpersonal level, emotional expression communicates information about individual feelings (Ekman, 1993), and also his or her social intentions (Fridlund, 1994;

Van Kleef, De Dreu, & Manstead, 2004). Emotional expression can induce emotions in others that may help them to respond to social events in an adaptative way (Keltner & Haidt, 1999). Furthermore, emotions act as reinforcers of other people's behavior (Klinnert, Campos, Sorce, Emde, & Svejda, 1983). Positive emotions serve as encouragement to continue a certain course of action, whereas negative emotions may act as cues to change and improve behaviors (Cacioppo & Gardner, 1999).

In the context of cyberspace, online communication is often a text-based communication which seeks to express emotions without the facial and body expression, and tone of the voice present in face-to-face situations. Using a range of expressive textual resources such as emoticons and paralanguage (capitalization, acronym, quotation, coloration, font size, abbreviation, exclamation, slang and colloquialism) is the key to compensate the low number of social cues in cyberspace (Tu, 2002). Derks, Fischer, and Bos (2008) proposed that emotions are expressed and perceived in online contexts using writing resources such as emoticons (Jibril & Abdullah, 2013) and repeated characters (Kalman & Gergle, 2014).

Some studies suggest that people express, perceive, use, and manage emotions during online communication (Bazarova, Taft, Choi, & Cosley, 2013; Guillory et al., 2011; Kramer, Guillory, & Hancock, 2014). In their narrative review about emotions in computer-based communication, Derks et al. (2008) concluded that, during online interaction, emotions were frequently expressed and that negative emotions were expressed during online interaction even more than during face-to-face interaction. Kramer and colleagues (2014) conducted an experiment with 689,003 Facebook users in which they manipulated the emotional content displayed in news feed. They found that a reduction of negative content in their news feed section caused a reduction of negative status updates and an increase of positive status updates. When positive content was reduced in their news feed section, participants tended to reduce their positive status updates and increase their negative ones. These results suggested that emotional content expressed by friends online can influence people, and emotions are spread through social networks. Volkova and Bachrach (2015) concluded that users expressed different emotions such as joy, sadness or anger after analyzing thousands of tweets. Bazarova and colleagues (2013) analysed language emotionality on Facebook and found that in the status updates, negative emotional expressions were less displayed than in private

messages and wall posts. A positive relationship was found between positive emotional expression and self-presentational concerns.

When communicating through Social Networking Sites, people use a range of cyberbehaviors related to emotional content online, specifically online emotional content expression, online emotional content perception, facilitating use of online emotional content, and understanding and management of online emotional content, called by Zych, Ortega-Ruiz and Marín-López (2017) *E-motion.* Incipient research results showed that emotional content online might be relevant for cyberbehavior in general. For example, Bayer, Ellison, Schoenebeck, Brady and Falk (2018) found that after posting or commenting on Facebook, people feel a high emotional arousal. Stieglitz and Dang-Xuan (2013) found a positive relation between emotionally charged tweets and more retweets. Nevertheless, little is known about possible risks and benefits of emotional content perceived and expressed online. It was found that e-motions are related to high social and emotional competencies, but also to the abuse of technology (Nasaescu et al., 2018). Given that bullies were sometimes described as skillful manipulators (Sutton et al., 1999b), an emotional content online that includes only some social clues, might be used to perpetrate cyberbullying.

Cyberbullying perpetration and victimization were found to have an emotional impact, but research in this field is still in its early stages. Some studies found that cybervictimization is related to feeling frustrated, angry, rejected, sad, and afraid (Beran & Li, 2005; Hinduja & Patchin, 2007; Gualdo, Hunter, Durkin, Arnaiz, & Maquilón, 2015; Patchin & Hinduja, 2006; Spears, Slee, Owens, & Johnson, 2009). Nevertheless, victim´s emotions might not be easy to perceive in computer-mediated communication. In cyberbullying, interpersonal interaction might take place without the opportunity for perpetrators to witness the emotional impact of their actions on others (Dooley, Pyżalski, & Cross, 2009; Ybarra & Mitchell, 2004). Thus, relationships among online emotional content and cyberbullying are yet to be explored in detail.

1.4. The current study

Research shows inconsistent results regarding social and emotional competencies in young people involved in cyberbullying (Zych et al., 2017). It has been found that both

cyberperpetrators and cyberbully/victims showed a lower level of social and emotional competencies in comparison to uninvolved students (Gómez-Ortiz et al., 2017; Romera et al., 2016). Cybervictims showed the same level of social and emotional competencies as uninvolved students (Gómez-Ortiz et al., 2017; Romera et al., 2016).

Perceiving, using, understanding, and managing e-motions was found to be positively related to emotional attention, emotional clarity and perceived emotional intelligence, aspects of emotional intelligence, but was also positively related to difficulties in identifying and perceiving feelings (Zych et al., 2017). Research shows that a high level of social and emotional competencies protects young people from cyberbullying. Thus, it is possible that a high level of social and emotional competencies improves interpersonal relationships which then act as protective factor against being involved in cyberbullying. At the same time, it is important to discover if a high level of social and emotional competencies is related to the expression and use of emotions in online interaction and if e-motions mediate the relation between social and emotional competencies and cyberbullying.

Given the relevance of emotions and social and emotional competencies in psychosocial adjustment and interpersonal relationships, together with the fact that, nowadays, interpersonal relationships are frequently initiated and maintained in cyberspace, where cyberbullying can happen, the current study focused on social and emotional competencies, emotional content online, and their relation to both cybervictimization and cyberperpetration. The dynamic relations among these variables are yet to be examined.

The objective of this study was to analyse the dynamic relations among emotions perceived, expressed and used in cyberspace, social and emotional competencies, cybervictimization and cyberperpetration, considering possible gender differences. After a thorough literature review, it was concluded that little is known about the social and emotional competencies perceived, expressed, used and managed in cyberspace and its influence on aggressive behavior. it was hypothesized that high E-motions are related to more cybervictimization (hypothesis 1) and cyberperpetration (hypothesis 2). High social and emotional competencies are related to less cybervictimization (hypothesis 3) and cyberperpetration (hypothesis 4). High social and emotional competencies are related to high e-motions (hypothesis 5). Sex differences were expected to be found (hypothesis 6).

2. Method

2.1. Participants

The current study was carried out with a representative sample of secondary compulsory education students from Andalusia, Spain. A random multistage stratified sampling took into account the proportion of students from each province (Almeria - 9.1%, Cadiz - 12.6%, Cordoba - 8.8%, Seville - 22.9%, Granada - 13.9%, Huelva - 4.9%, Jaen - 9.1%, and Malaga - 18.7%), public (77.3%) and private (22.7%) high schools, and location size (small - 18.2%, medium - 36.4%, and large - 45.5%). One group of each grade was selected in each school, which resulted in approximately 80 participants per school, approximately 20 per class. Following those criteria, 22 schools were selected with a 95% reliability and a sample error of 2.1%.

A total sample included 2,114 participants, 1,088 girls (50.9%) and 1,026 boys (48.0%), with a mean age of 13.79 years old (*SD* = 1.40) ranging from 11 to 19. Students were equally distributed between grades: 542 in first grade (25.3%), 555 in second grade (25.9%), 529 in third grade (24.7%) and 508 in fourth grade (23.7%). The data from 174 participants were eliminated because they informed not using Social Networking Sites. The final sample was composed by 1,940 participants.

2.2. Instruments

European Cyberbullying Intervention Project Questionnaire (ECIP-Q) (Brighi et al., 2012; Del Rey et al., 2015; Ortega-Ruiz, Del Rey, & Casas, 2016) is a cyberbullying measure with 22 items. Eleven items measure cybervictimization (e.g., someone has posted embarrassing photographs or videos of me on the Internet) and showed a good Cronbach's alpha of .80 in the Spanish validation (Ortega-Ruiz et al., 2016) and McDonald's $\Omega = .94$ and Cronbach's $\alpha = .94$ in the current study. There are also 11 items that measure cyberperpetration (e.g., I have posted embarrasing photographs or videos of someone on the Internet) with a good Cronbach's alpha of .88 in the Spanish validation (Ortega-Ruiz et al., 2016) and McDonald's $\Omega = .96$, Cronbach's $\alpha = .96$ in the current study. Participants were asked to answer the questionnaire with reference to "the past few months". Items were answered on a five-point Likert scale ranging from 0 (never) to 4 (more than once a week). The current data adjusted adequately to this two-factor structure according to a confirmatory factor analysis results (SB $\chi^2 = 1426.06$; df = 208; NFI = .97; NNFI = .97; CFI = .98; RMSEA = .054, 90% CI = .052, .057).

E-motions Questionnaire (Zych et al., 2017) contains 21 items about emotional content expressed, perceived, managed, and self-regulated through virtual social networks. It is divided into four subscales that showed a good reliability for the current study: E-motional expression (α=.84; Ω=.84) (e.g.,"I express my emotions through Social Networking Sites such as Facebook or Instagram"); e-motional perception (α=.75; Ω=.75) (e.g., "I know what my contacts on Facebook or Instagram feel"); facilitating use of e-motions (α=.91; Ω=90) (e.g.,"If I have to do something important, expressing what I feel on Facebook or Instagram helps me"); and understanding and management of e-motions (α=.87; Ω=.87) (e.g., "I know how to differentiate one emotion from another when it is expressed on Facebook or Instagram"). Items were answered on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), referred to "the past few months" in this study. The total scale shows good reliability (Cronbach's α = .94; McDonald's Ω = .93). The current data adjusted adequately to this four-factor structure according to the results of a confirmatory factor analysis (SB χ^2 = 1509.34; df = 183; NFI = .98; NNFI = .98; CFI = .98; RMSEA = .07; 90% CI = .064, .070).

Social and Emotional Competencies Questionnaire (SEC-Q) (Zych, Ortega-Ruiz, Muñoz-Morales, & Llorent, 2018) contains 16 items divided into four subscales that show a good reliability for the current study: Self-awareness, related to being aware of self emotions and thoughts (McDonald's Ω= .72, Cronbach's α = .72, CR = .71; e.g., "I know how my emotions influence what I do"); self-motivation and management referred to pursuing goals overcoming difficulties (McDonald's Ω = .67, Cronbach's α = .65, CR = .67; e.g., "I know how to motivate myself"); social-awareness and prosocial behavior in reference to understanding, helping and having good relationships with others (McDonald's Ω = .74 and Cronbach's α = .73, CR = .73; e.g., "I pay attention to the needs of others", "I offer help to those who need me"); and responsible decision making related to analyzing consequences in a reflective way (McDonald's Ω = .77, Cronbach's α = .77, CR = .76; e.g., "I make decisions analyzing carefully possible consequences"). A confirmatory factor analysis showed an adequate adjustment of the current data to this four-factor model (SBχ^2 = 283.30; df = 98; NFI = .97; NNFI = .97; CFI = .98; RMSEA = .032, 90% CI = .027, .036).

2.3. Design and procedure

A cross-sectional descriptive ex post facto study through survey was carried out with a randomly selected representative sample of Andalusian adolescents. The population consisted of 372,031 students in the academic year 2014/2015. Considering the proportion of students in each Andalusian province, multi-stage stratified random sampling was used. Data were collected in the final months (June and July, 2014) of the second semester of 2014/2015 and the first semester (September and October, 2015) of 2015/2016 to increase representativeness regarding the temporal point in the academic year. After selecting 22 schools, head teachers were contacted, they were informed about the study and they were asked for collaboration. After obtaining the pertal permissions, researchers went to all the participating schools and explained the objectives of the study together with the intructions to fill in the questionnaires. Students were asked to fill in the questionnaires in approximately 30 minutes during their regular classroom hours. Participation was voluntary and anonymous; participants were able to decline or withdraw at any point of data collection (15 participants declined to participate). Surveys were collected by researchers and teachers had no access to the individual questionnaires or data. This procedure complies with international and national laws, ethical standards and it was approved by the Ethical Committee of the University of (blinded for peer review).

2.4. Data analysis

Reliability analyses were carried out using Cronbach´s alphas and McDonald´s omegas calculated with statistical software FACTOR (Lorenzo-Seva, & Ferrando, 2013). Confirmatory Factor Analyses were carried out to check if the factor structure adjusts correctly, using EQS 6.2 software. Descriptive statistics, Pearson bivariate correlations and logistic reggresion coefficients were calculated using PASW Statistics 22 software. Multigroup analyses were carried out using AMOS v.22. A structural equation model was built using AMOS 22.0 in order to confirm the dynamic relations among the studied variables. Logistic regression analyses were performed with the three cyberbullying roles (cybervictim, cyberbully and cyberbully/victim), using age, gender, Social and Emotional Competencies and E-motions as predictors.Roles were coded as pure cybervictims (responded at least “once a month” in at least one cybervictimization item and never in cyberperpetration items), pure cyberperpetrators (responded at least “once a month” in at least one cyberperpetration item and never in cybervictimization items) and cyberbully/victims (responded at least “once a month” in at least one cybervictimization

and cyberperpetration item). This was carried out in order to discover if predictors were uniquely related to the cyberbullying roles.

Item parceling was used in the structural equation model in order to reduce the model complexity, reducing the number of indicators of a latent factor to a smaller number (Nasser & Takahashi, 2003). This method has proved to be efficient to achieve more parsimonious structural models. Using item parcels instead of individual items reduces the correlations between residuals and the chances of double loadings (Little, Cunningham, Shahar, & Widaman, 2002). The transgression of normal distribution is more likely to occur when working with individual items than when working with item parcels (Bandalos, 2002). Nevertheless, item parceling should be used only when relations among the latent constructs and not among the items are the focus of interest (Little et al., 2002) as is the case in the current study. Following Matsunaga's (2008) recommendation, items were assigned to parcels based on factor loadings to obtain parcels with approximately equal communality and error variances.

Several indices were used to assess the model fit. Given that chi-squared is sensitive to sample size, a good model fit was considered using indices such as the CFI, and RMSEA. Reference values for a good model fit are CFI above .95; and RMSEA of .06 or less (Bentler, 1992; Hu & Bentler, 1999). In pairwise parameter comparisons values greater than 1.96 indicate a $p < .05$ difference in the parameters. The Maximum Likelihood estimation method was used.

3. RESULTS

The correlation matrix including *Social and emotional competencies*, *E-motions*, *Cybervictimization* and *Cyberperpetration* is presented in table 1. It was found that *Cybervictimization* was related to low scores in *Social and emotional competencies,* including *Self-management and motivation*, *Social awareness and prosocial behavior* and *Responsible decision making*. *Cybervictimization* was also related to high scores in *E-motions*, including all its subscales. *Cyberperpetration* was related to low scores in *Social and emotional competencies,* including all its subscales. Cyberperpetration was also related to high scores in *E-motions*, including *E-motional expression*, *E-motional perception* and *Facilitating use of E-motions*.

E-motional expression was related to high scores in *Self-awareness* and *Social awareness and prosocial behavior*. *E-motional perception* was related to high scores in

Social and emotional competencies, including all its subscales. *Facilitating use of e-motions* was related to high scores in *Social awareness and prosocial behavior*. *Understanding and management of e-motions* was related to high scores in *Social and emotional competencies*, including all its subscales. See table 1 for more details.

Table 1

Structural equation models were built with *E-motions* and *Social and emotional competencies* as predictors of *Cybervictimization* with direct and indirect relations between *Social and emotional competencies* and both *Cybervictimization* and *Cyberperpetration*, mediated by *Emotional content online*. For the *Cybervictimization* and *Cyberperpetration* scales, item parceling was used. Full models are shown in Figure 1.

Figure 1

A *Cybervictimization* model where all paths shown in Figure 1 were free to vary across males and females was tested first, and pairwise parameter comparisons were requested. Initial Cybervictimization model fit was good: $\chi^2_{(141)} = 734.43$, $p < .000$, CFI = .94, RMSEA = .045 (90% CI = .041, .048). Pairwise parameter comparisons indicated one sex difference on the key path from *Social and emotional competencies* to *E-motions*. The association between *Social and emotional competencies* and *E-motions* was stronger for males (z=2.01).

The final model constraining invariant parameters across males and females to be the same was assessed. The fit of the final model was similar to the initial, more parsimonious model: $\chi^2_{(143)} = 737.41$, $p < .000$; CFI=.94, RMSEA=.044 (90% CI = .041, .048). Chi-squared change test indicated no significant decrease in fit when moving to the constrained model ($p = .225$), supporting the more parsimonious model. This means that, although the strength of the relations might differ between males and females, the model itself does not change depending on gender.

Next, the *Cyberperpetration* model was assessed in the same way. The initial *Cyberperpetration* model fit was good: $\chi^2_{(137)} = 719.85$, $p < .000$, CFI = .94, RMSEA = .045 (90% CI = .042, .048). Pairwise parameter comparisons showed no sex differences.

The final model, constrained the invariant parameters across males and females to be the same, showed a similar model fit: $\chi^2_{(139)} = 721.58$, $p = .000$, CFI = .94, RMSEA = .045 (90% CI =.041, .048). Chi-squared change test showed no significant decrease in fit when moving to the constrained model ($p = .420$), supporting the more parsimonious model. Again, this means that the model is the same for males and females, although the strength of the relations may differ between genders.

As shown in Table 2, there is a positive association between *E-motions* and *Cybervictimization* scores, and a positive association, notably stronger for males, between *Social and emotional competencies* and *E-motions*. However, there is a negative association between *Social and emotional competencies* and *Cybervictimization*.

There is a positive association between *E-motions* and *Cyberperpetration* scores, and a positive association, notably stronger for males, between *Social and emotional competencies* and *E-motions*. There is also a negative association between *Social and emotional competencies* and *Cyberperpetration*.

Table 2

Logistic regression analyses were performed to discover the details of the dynamic relations among the studied variables, including the subscales and different types of involvement in *Cyberbullying*. Table 3 shows logistic regression coefficients predicting involvement in *Cyberbullying* roles such as *Cyberperpetrators*, *Cybervictimis* and *Cyberbully/victims*. Variables such as age, gender, different dimensions of *Social and emotional competencies* and *Emotional content in online communication* were entered as predictors.

Table 3

Male gender (OR=2.05) and *E-motional expression online* (OR=1.11) uniquely predicted higher involvement as *Cyberbully/victim. Responsible decision making* (OR= .90) predicted lower involvement as *Cyberbully/victim*. *Perceiving e-motions online* predicted higher involvement in *Cyberperpetration* (OR=1.20) whereas *Understanding and management of e-motions online* (OR=.92) predicted lower involvement in

Cyberperpetration. *Facilitating use of e-motions online* (OR=1.06) predicted a higher involvement in *Cybervictimization*.

4. Discussion

The current study clarified whether social and emotional competencies and emotional content in cyberspace are related to cyberbullying and if they act as protective or risk factors. The aim of this research was to analyze the dynamic relations among emotions perceived, esperessed and used in cyberspace, social and emotional competencies, cybervictimization and cyberperpetration, considering possible gender differences.

The results of the current study showed that e-motions were related to more cybervictimization (hypothesis 1) and cyberperpetration (hypothesis 2). It was also found that a high level of social and emotional competencies was related to less cybervictimization (hypothesis 3) and cyberperpetration (hypothesis 4). A high level of social and emotional competencies was related to more emotional content online (hypothesis 5). In addition, gender differences were found (hypothesis 6). The relation between a high level of social and emotional competencies and a high level of e-motions was stronger for males in both cyberperpetration and cybervictimization models.

The current study advances knowledge on the importance of social and emotional competences in face-to-face and in online interactions in relation to cyberbullying. Results suggest that having a high level of social and emotional competencies may contribute to an improvement in interpersonal relationships which protect from cybervictimization and cyberperpetration. However, a high level of social and emotional competencies is also related to a higher use of emotions online, which is related to a higher risk of involvement in both cybervictimization and cyberperpetration.

Perhaps good social and emotional competencies encourage a greater use of emotions online, which could expose emotional content giving opportunities to cyberbullies to attack cybervictims. It could also be due to the difficulties to accurately perceive and/or interpret other people's emotions and feelings when interacting through electronic devices such as instant messaging or email (Cabrera & Pelayo, 2002; Foster, 2004; Levin & Arluke, 1987; McDonald, Putallaz, Grimes, Kupersmidt, & Coie, 2007). Not being able to see and feel, to be seen and be felt could result in fewer social and emotional cues being available. This could also be related to some mechanisms present in cyber-behavior such as "deindividuation" and "disinhibition" (Silke, 2003; Suler, 2004).

Results suggest that future programs against cyberbullying could focus explicitly on social and emotional competencies and train how to manage emotions in online interaction, promoting a positive cyber-climate. The cross-sectional design of this study cannot confirm causal relations among variables. Self-reports were used in this study because they are appropriate to inquiry about social and emotional competencies and online emotional content. Nonetheless, self-reports have limitations such as possible social desirability even when anonymity is guaranteed. It would be useful and interesting to conduct future longitudinal and experimental research on this topic, together with similar studies in different contexts and different age groups (e.g., young adults). New research about the relations between emotional content online, social and emotional competencies and other variables could shed new light on cyberbullying. It is possible that this new promising line of research will help in further advancement of the field.

This study presents some relevant implications for both educational policy and practice. The results of this study suggest that social and emotional learning programs (Durlak et al., 2011) might be implemented to prevent cyberbullying. Results suggest that it would be desirable to promote face-to-face interpersonal interactions and relationships, together with social and emotional competencies (Taylor, Oberle, Durlak, & Weissberg, 2017). It also seems reasonable to promote moderate and adequate expression, use, and management of emotions in online communication. This research highlights the importance of training adolescents to constructively cope with their emotions while they interact through digital devices. It could also be usefult to implement a specific training to help youth to acquire and improve communication skills in order to avoid the risk of being involved in cyberbullying situations (López-Pradas, Romera, Casas, & Ortega-Ruiz, 2017). This work provides evidence for the design and implementation of programs that could effectively prevent or intervene in cyberbullying or promote positive cyber-climate.

References

Ackers, M. J. (2012). Cyberbullying: Through the eyes of children and young people. *Educational Psychology in Practice, 28*(2), 141-157. https://doi.org/10.1080/02667363.2012.665356

Amichai-Hamburger, Y., Kingsbury, M., & Schneider, B. H. (2013). Friendship: An old concept with a new meaning. *Computers in Human Behavior, 29*(1), 33-39. https://doi.org/10.1016/j.chb.2012.05.025

Arce, R., Fariña, F., & Vázquez, M. J. (2011). Comportamiento inadaptado en menores: Factores de riesgo y protección. In F. Fariña & R. Arce (Eds.), *Prevención e intervención con menores en riesgo de desviación social* (pp. 53-102). Santiago de Compostela, SP: Andavira Editora.

Arsenio, W. F., & Lemerise, E. A. (2001). Varieties of childhood bullying: Values, emotion processes, and social competence. *Social Development, 10*(1), 59-73. https://doi.org/10.1111/1467-9507.00148

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling, 9*(1), 78-102. https://doi.org/10.1207/S15328007SEM0901_5

Bayer, J., Ellison, N., Schoenebeck, S., Brady, E., & Falk, E. B. (2018). Facebook in context (s): Measuring emotional responses across time and space. *New Media and Society, 20*(3), 1047-1067. https://doi.org/10.1177/1461444816681522

Bazarova, N. N., Taft, J. G., Choi, Y. H., & Cosley, D. (2013). Managing impressions and relationships on Facebook: Self-presentational and relational concerns revealed through the analysis of language style. *Journal of Language and Social Psychology, 32*(2), 121-141. https://doi.org/10.1177/0261927X12456384

Bentler, P. M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin, 112*(3), 400-404. https://doi.org/10.1037/0033-2909.112.3.400

Beran, T., & Li, Q. (2005). Cyber-harassment: A study of a new method for an old behavior. *Journal of Educational Computing Research, 32*(3), 265-277. https://doi.org/10.2190/8YQM-B04H-PG4D-BLLH

Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children and Youth Services Review, 41*, 27-36. https://doi.org/10.1016/j.childyouth.2014.03.001

Brackett, M. A., Mayer, J. D., & Warner, R. M. (2004). Emotional intelligence and its relation to everyday behaviour. *Personality and Individual Differences, 36*(6), 1387-1402. https://doi.org/10.1016/S0191-8869(03)00236-8

Brighi, A., Guarini, A., Melotti, G., Galli, S., & Genta, M. L. (2012). Predictors of victimisation across direct bullying, indirect bullying and cyberbullying. *Emotional and Behavioural Difficulties, 17*(3-4), 375-388. https://doi.org/10.1080/13632752.2012.704684

Brighi, A., Ortega, R., Scheitauer, H., Smith, P. K., Tsormpatzoudis, C., Barkoukis, V., Del Rey, R., et al. (2012). European Cyberbullying Intervention Project Questionnaire (ECIPQ). University of Bologna. *Unpublished Manuscript*.

Busch, V., Laninga-Wijnen, L., van Yperen, T. A., Schrijvers, A. J. P., & De Leeuw, J. R. J. (2015). Bidirectional longitudinal associations of perpetration and victimization of peer bullying with psychosocial problems in adolescents: A cross-

lagged panel study. *School Psychology International, 36*(5), 532-549. https://doi.org/10.1177/0143034315604018

Cabrera, A., & Pelayo, N. (2002) *Lenguaje y comunicación: Conceptos básicos, aspectos teóricos generales, características, estructura, naturaleza, y funciones del lenguaje y de la comunicación oral y escrita*. Venezuela, Caracas: El Nacional.

Cacioppo, J. T., & Gardner, W. L. (1999). Emotion. *Annual Review of Psychology, 50*(1), 191-214. https://doi.org/10.1146/annurev.psych.50.1.191

Campbell, M., Spears, B., Slee, P., Butler, D., & Kift, S. (2012). Victims' perceptions of traditional and cyberbullying, and the psychosocial correlates of their victimisation. *Emotional and Behavioural Difficulties, 17*(3-4), 389-401. https://doi.org/10.1080/13632752.2012.704316

Charbonneau, D., & Nicol, A. A. (2002). Emotional intelligence and leadership in adolescents. *Personality and Individual Differences, 33*(7), 1101-1113. https://doi.org/10.1016/S0191-8869(01)00216-1

Collaborative for Academic, Social, and Emotional Learning (2015). *2015 CASEL guide: Effective social and emotional learning programs: Secondary school edition*. Chicago, IL: Author.

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly, 25*(2), 65–83. https://doi.org/10.1037/a0020149

Crick, N. R., & Dodge, K. A. (1999). 'Superiority' is in the eye of the beholder: A comment on Sutton, Smith, and Swettenham. *Social Development*, *8*(1), 128-131. https://doi.org/10.1111/1467-9507.00084

Cross, D., Lester, L., & Barnes, A. (2015). A longitudinal study of the social and emotional predictors and consequences of cyber and traditional bullying victimisation. *International Journal of Public Health, 60*(2), 207-217. https://doi.org/10.1007/s00038-015-0655-1

Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumbholz, 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. https://doi.org/10.1016/j.chb.2015.03.065

Del Rey, R., Elipe, P., & Ortega-Ruiz, R. (2012). Bullying and cyberbullying: Overlapping and predictive value of the co-occurrence. *Psicothema, 24*(4), 608-613. https://doi.org/10.3916/c39-2012-03-03

Derks, D., Fischer, A. H., y Bos, A. E. R. (2008). The role of emotion in computer-mediated communication: A review. *Computers in Human Behavior, 24*(3), 766–785. https://doi.org/10.1016/j.chb.2007.04.004

Dinev, T. & Hart, P. (2004). Internet privacy concerns and their antecedents measurement validity and a regression model. *Behaviour and Information Technology, 23*(6), 413-422. https://doi.org/10.1080/01449290410001715723

Dooley, J. J., Pyżalski, J., & Cross, D. (2009). Cyberbullying versus face-to-face bullying: A theoretical and conceptual review. *Zeitschrift für Psychologie/Journal of Psychology, 217*(4), 182-188. https://doi.org/10.1027/0044-3409.217.4.182

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*(1), 405-432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Echeburúa, E., & Corral, P. (2009). Las adicciones con o sin droga: una patología de la libertad. In E. Echeburúa, F. J. Labrador & E. Becoña (Eds.). *Adicción a las nuevas tecnologías en adolescentes y jóvenes* (pp. 29-44). Madrid: Pirámide.

Ekman, P. (1993). Facial expression and emotion. *American Psychologist, 48*(4), 384-392. https://doi.org/10.1037/0003-066X.48.4.384

Elias, M. J., & Haynes, N. M. (2008). Social competence, social support, and academic achievement in minority, low-income, urban elementary school children. *School Psychology Quarterly, 23*(4), 474-495. https://doi.org/10.1037/1045-3830.23.4.474

Erdur-Baker, Ö. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media and Society, 12*(1), 109-125. https://doi.org/10.1177/1461444809341260

Fernández-Berrocal, P., Cabello, R., & Gutiérrez-Cobo, M. J. (2017). Avances en la investigación sobre competencias emocionales en educación. *Revista Interuniversitaria de Formación del Profesorado*, *88*(31.1), 15-26.

Foster, E. K. (2004). Research on gossip: Taxonomy, methods, and future directions. *Review of General Psychology*, *8*(2), 78-99. https://doi.org/10.1037/1089-2680.8.2.78

Fridlund A. (1994). *Human facial expression: An evolutionary view*. New York, NY: Academic Press

Garaigordobil, M., & Martínez-Valderrey, V. (2014). Efecto del Cyberprogram 2.0 sobre la reducción de la victimización y la mejora de la competencia social en la adolescencia. *Revista de Psicodidáctica, 19*(2), 289-305. https://doi.org/ 10.1387/RevPsicodidact.10239

Gibbons, S. L. (2007). *The academic library and the net gen student: Making the connections.* Chicago, IL: American Library Association.

Goldbaum, S., Craig, W. M., Pepler, D., & Connolly, J. (2003). Developmental trajectories of victimization: Identifying risk and protective factors. *Journal of Applied School Psychology, 19*(2), 139-156. https://doi.org/10.1300/J008v19n02_09

Gómez-Ortiz, O., Romera, E. M., & Ortega-Ruiz, R. (2017). Multidimensionality of social competence: Measurement of the construct and its relationship with bullying roles. *Revista de Psicodidáctica, 22*(1), 37–44. https://doi.org/ 10.1387/RevPsicodidact.15702

Gradinger, P., Yanagida, T., Strohmeier, D., & Spiel, C. (2016). Effectiveness and sustainability of the ViSC Social Competence Program to prevent cyberbullying and cyber-victimization: Class and individual level moderators. *Aggressive Behavior, 42*(2), 181-193. https://doi.org/10.1002/ab.21631

Gualdo, A. M. G., Hunter, S. C., Durkin, K., Arnaiz, P., & Maquilón, J. J. (2015). The emotional impact of cyberbullying: Differences in perceptions and experiences as a function of role. *Computers and Education, 82*, 228-235. https://doi.org/10.1016/j.compedu.2014.11.013

Guillory, J., Spiegel, J., Drislane, M., Weiss, B., Donner, W., & Hancock, J. T. (2011). Upset now? Emotion contagion in distributed groups. Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2011), 745-748. https://doi.org/10.1145/1978942.1979049

Hinduja, S., & Patchin, J. W. (2007). Offline consequences of online victimization: School violence and delinquency. *Journal of School Violence, 6*(3), 89-112. https://doi.org/10.1300/J202v06n03_06

Hinduja, S., & Patchin, J. W. (2008). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior, 29*(2), 129-156. https://doi.org/10.1080/01639620701457816

Howe, N., & Strauss, W. (2000). *Millennials rising: The next great generation*. Vintage Books, New York, NY

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Huang, Y. Y., & Chou, C. (2010). An analysis of multiple factors of cyberbullying among junior high school students in Taiwan. *Computers in Human Behavior, 26*(6), 1581-1590. https://doi.org/10.1016/j.chb.2010.06.005

Jaffee, S., & Hyde, J. S. (2000). Gender differences in moral orientation: a meta-analysis. *Psychological Bulletin, 126*(5), 703. https://doi.org/10.1037/0033-2909.126.5.703

Jibril, T. A., & Abdullah, M.H. (2013). Relevance of emoticons in computer-mediated communication contexts: An overview. *Asian Social Science, 9*(4), 201-207. https://doi.org/10.5539/ass.v9n4p201

Kalman, Y. M., & Gergle, D. (2014). Letter repetitions in computer-mediated communication: A unique link between spoken and online language. *Computers in Human Behavior, 34*, 187-193. https://doi.org/10.1016/j.chb.2014.01.047

Kaltiala-Heino, R., Fröjd, S., & Marttunen, M. (2010). Involvement in bullying and depression in a 2-year follow-up in middle adolescence. *European Child and Adolescent Psychiatry, 19*(1), 45. https://doi.org/10.1007/s00787-009-0039-2

Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition and Emotion, 13*(5), 505-521. https://doi.org/10.1080/026999399379168

Klinnert, M. D., Campos, J. J., Sorce, J. F., Emde, R. N., & Svejda, M. (1983). Emotions as behavior regulators: Social referencing in infancy. In R. Plutchik & H. Kellerman (Eds.) *Emotions in Early Development* (pp. 57–86). New York, NY: Academic Press. https://doi.org/10.1016/B978-0-12-558702-0.50009-1

Kowalski, R. M., & Limber, S. P. (2007). Electronic bullying among middle school students. *Journal of Adolescent Health, 41*(6), S22-S30. https://doi.org/10.1016/j.jadohealth.2007.08.017

Kramer, A. D. I., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences of the United States of America, 111*(24), 8788-8790. https://doi.org/10.1073/pnas.1320040111

Levenson, R. W. (1994). Human emotions: A functional view. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 123–126). New York, NY: Oxford University Press

Levin, J., & Arluke, A. (1987). *Gossip: The inside scoop.* New York, NY: Springer. https://doi.org/10.1007/978-1-4899-6112-9

Lester, L., & Cross, D. (2015). The relationship between school climate and mental and emotional wellbeing over the transition from primary to secondary school. *Psychology of Well-being, 5*(1), 9. https://doi.org/10.1186/s13612-015-0037-8

Lester, L., Cross, D., Dooley, J., & Shaw, T. (2013). Developmental trajectories of adolescent victimization: Predictors and outcomes. *Social Influence, 8*(2-3), 107-130. https://doi.org/10.1080/15534510.2012.734526

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*(2), 151-173. https://doi.org/10.1207/S15328007SEM0902_1

López-Pradas, I. C., Romera, E. M., Casas, J. A., & Ortega-Ruiz, R. (2017). Cybergossip and cyberbullying during primary school years. *Psicología Educativa, 23*(2), 73-80. https://doi.org/10.1016/j.pse.2017.05.007

Lorenzo-Seva, U., & Ferrando, P. J. (2013). FACTOR 9.2: A Comprehensive Program for Fitting Exploratory and Semi confirmatory Factor Analysis and IRT Models. *Applied Psychological Measurement, 37*(6), 497-498. https://doi.org/10.1177/0146621613487794

Matsunaga, M. (2008). Item parceling in structural equation modeling: A primer. *Communication Methods and Measures, 2*(4), 260-293. https://doi.org/10.1080/19312450802458935

McDonald, K. L., Putallaz, M., Grimes, C. L., Kupersmidt, J. B., & Coie, J. D. (2007). Girl talk: Gossip, friendship, and sociometric status. *Merrill-Palmer Quarterly, 53*(3), 381-411. https://doi.org/10.1353/mpq.2007.0017

Mishna, F., Saini, M., & Solomon, S. (2009). Ongoing and online: Children and youth's perceptions of cyber bullying. *Children and Youth Services Review, 31*(12), 1222-1228. https://doi.org/10.1016/j.childyouth.2009.05.004

Nasaescu, E., Marín-López, I., Llorent, V. J., Ortega-Ruiz, R., & Zych, I. (2018). Abuse of technology in adolescence and its relation to social and emotional competencies, emotions in online communication, and bullying. *Computers in Human Behavior, 88*, 114-120. https://doi.org/10.1016/j.chb.2018.06.036

Nasser, F., & Takahashi, T. (2003). The effect of using item parcels on ad hoc goodness-of-fit indexes in confirmatory factor analysis: An example using Sarason's Reactions to Tests. *Applied Measurement in Education, 16*(1), 75-97. https://doi.org/10.1207/S15324818AME1601_4

Navarro, J. N., & Jasinski, J. L. (2012). Going cyber: Using routine activities theory to predict cyberbullying experiences. *Sociological Spectrum, 32*(1), 81-94. https://doi.org/10.1080/02732173.2012.628560

Navarro, R., Yubero, S., Larrañaga, E., & Martínez, V. (2012). Children's cyberbullying victimization: Associations with social anxiety and social competence in a Spanish sample. *Child Indicators Research, 5*(2), 281-295. https://doi.org/10.1007/s12187-011-9132-4.

Oblinger, D.G., & Oblinger, J.L. (2005). "Is it age or IT: first steps toward understanding the Net Generation", In D.G. Oblinger, & J.L. Oblinger, (Eds.), *Educating the Net Generation*, Educause, Boulder, CO, available at: https://www.educause.edu/research-and-publications/books/educating-net-generation/it-age-or-it-first-steps-toward-understanding-net-generation (accessed 30 May 2018).

Olenik-Shemesh, D., Heiman, T., & Eden, S. (2012). Cyberbullying victimisation in adolescence: Relationships with loneliness and depressive mood. *Emotional and Behavioural Difficulties, 17*(3-4), 361-374. https://doi.org/10.1080/13632752.2012.704227

Olweus, D. (2012). Cyberbullying: An overrated phenomenon? *European Journal of Developmental Psychology*, *9*(5), 520-538. https://doi.org/10.1080/17405629.2012.682358

Ortega, R., Calmaestra, J., & Mora Merchán, J. (2008). Cyberbullying. *International Journal of Psychology and Psychological Therapy, 8*(2), 183-192.

Ortega-Ruiz, R., Casas, J.A., & Del Rey, R. (2014). Towards the construct of cyberconvivencia/ Hacia el constructo ciberconvivencia. *Infancia y Aprendizaje, 37*(3), 602-628. https://doi.org/10.1080/02103702.2014.957537

Ortega-Ruiz, R., Del Rey, R., & Casas, J. A. (2016). Evaluar el bullying y el cyberbullying validación española del EBIP-Q y del ECIP-Q. *Psicología Educativa, 22*(1), 71–79. https://doi.org/10.1016/j.pse.2016.01.004

Ortega, R., Elipe, P., Mora-Merchán, J. A., Calmaestra, J., & Vega, E. (2009). The Emotional Impact on Victims of Traditional Bullying and Cyberbullying. *Zeitschrift Für Psychologie / Journal of Psychology, 217*(4), 197–204. https://doi.org/10.1027/0044-3409.217.4.197

Parkinson, B. (1996). Emotions are social. *British Journal of Psychology, 87*(4), 663-683. https://doi.org/10.1111/j.2044-8295.1996.tb02615.x

Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice, 4*(2), 148-169. https://doi.org/10.1177/1541204006286288

Pettalia, J. L., Levin, E., & Dickinson, J. (2013). Cyberbullying: Eliciting harm without consequence. *Computers in Human Behavior, 29*(6), 2758-2765. https://doi.org/10.1016/j.chb.2013.07.020

Prensky, M. (2005). "Listen to the natives". *Educational Leadership, 63*(4), 8-13.

Raskauskas, J., & Stoltz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology, 43*(3), 564-575. https://doi.org/10.1037/0012-1649.43.3.564

Rigby, K., & Smith, P. K. (2011). Is school bullying really on the rise? *Social Psychology of Education*, *14*(4), 441-455. https://doi.org/10.1007/s11218-011-9158-y

Romera, E. M., Cano, J. J., García-Fernández, C. M., & Ortega-Ruiz, R. (2016). Cyber-bullying: Social competence, motivation and peer relationships. *Comunicar, 24*(48), 71–79. https://doi.org/10.3916/C48-2016-07

Romera, E. M., Herrera-López, M., Casas, J. A., Ortega-Ruiz, R., & Gómez-Ortiz, O. (2017). Multidimensional social competence, motivation, and cyberbullying: A cultural approach with Colombian and Spanish Adolescents. *Journal of Cross-Cultural Psychology, 48*(8), 1183-1197. https://doi.org/10.1177/0022022116687854

Rose, A. J., & Asher, S. R. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology, 35*(1), 69. https://doi.org/10.1037/0012-1649.35.1.69

Rosenberg, M., Houghton, S., Hunter, S. C., Zadow, C., Shilton, T., Wood, L., & Lawrence, D. (2018). A latent growth curve model to estimate electronic screen use patterns amongst adolescents aged 10 to 17 years. *BMC public health, 18*(1), 332. https://doi.org/10.1186/s12889-018-5240-0

Sandstrom, M. J., & Cillessen, A. H. (2003). Sociometric status and children's peer experiences: Use of the daily diary method. *Merrill-Palmer Quarterly, 49*(4), 427-452. https://doi.org/10.1353/mpq.2003.0025

Schoffstall, C. L., & Cohen, R. (2011). Cyber aggression: The relation between online offenders and offline social competence. *Social Development, 20*(3), 587–604. https://doi.org/10.1111/j.1467-9507.2011.00609.x

Silke, A. (2003). Deindividuation, anonymity, and violence: Findings from Northern Ireland. *The Journal of Social Psychology, 143*(4), 493-499. https://doi.org/10.1080/00224540309598458

Sklad, M., Diekstra, R., Ritter, M. D., Ben, J., & Gravesteijn, C. (2012). Effectiveness of school-based universal social, emotional, and behavioral programs: Do they enhance students' development in the area of skill, behavior, and adjustment? *Psychology in the Schools, 49*(9), 892-909. https://doi.org/10.1002/pits.21641

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*(2), 147-154. https://doi.org/10.1111/j.1467-9450.2007.00611.x

Smith, P. K. (2015). The nature of cyberbullying and what we can do about it. *Journal of Research in Special Educational Needs*, *15*(3), 176-184. https://doi.org/10.1111/1471-3802.12114

Smith, P. K., 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. https://doi.org/10.1111/j.1469-7610.2007.01846.x

Smith, P. K., Mahdavi, J., Carvalho, M., & Tippett, N. (2006). An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying. *Research Brief No. RBX03-06.* London, UK: DfES.

Sorrentino, A., Baldry, A. C., Farrington, D. P., & Blaya, C. (2019). Epidemiology of Cyberbullying across Europe: Differences between Countries and Genders. *Educational Sciences: Theory and Practice, 19*(2), 74-91. https://doi.org/10.12738/estp.2019.2.005

Sourander, A., Klomek, A. B., Ikonen, M., Lindroos, J., Luntamo, T., Koskelainen, M., ... & Helenius, H. (2010). Psychosocial risk factors associated with cyberbullying among adolescents: A population-based study. *Archives of General Psychiatry, 67*(7), 720-728. https://doi.org/10.1001/archgenpsychiatry.2010.79

Spears, B., Slee, P., Owens, L., & Johnson, B. (2009). Behind the scenes and screens: Insights into the human dimension of covert and cyberbullying. *Zeitschrift für Psychologie/Journal of Psychology, 217*(4), 189-196. https://doi.org/10.1027/0044-3409.217.4.189

Stein, A., & Craig, A. (2000). The dot.com generation: IT practice and skills of transition students. *Proceedings of the Australasian Conference on Computing Education*, *8*, 220-227. https://doi.org/10.1145/359369.359403

Stieglitz, S., & Dang-Xuan, L. (2013). Emotions and information diffusion in social media—sentiment of microblogs and sharing behavior. *Journal of Management Information Systems, 29*(4), 217-248. https://doi.org/10.2753/MIS0742-1222290408

Suler, J. (2004). The online disinhibition effect. *Cyberpsychology and Behaviour, 7*(3), 321-326. https://doi.org/10.1089/1094931041291295

Sutton, J., Smith, P. K., & Swettenham, J. (1999a). Bullying and 'theory of mind': A critique of the 'social skills deficit'view of anti-social behaviour. *Social Development, 8*(1), 117-127. https://doi.org/10.1111/1467-9507.00083

Sutton, J., Smith, P. K., & Swettenham, J. (1999b). Social cognition and bullying: Social inadequacy or skilled manipulation? *British Journal of Developmental Psychology, 17*(3), 435-450. https://doi.org/10.1348/026151099165384

Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Development, 88*(4), 1156-1171. https://doi.org/10.1111/cdev.12864

Tu, C. H. (2002). The impacts of text-based CMC on online social presence. *Journal of Interactive Online Learning*, *1*(2), 1-24.

Van Kleef, G. A., De Dreu, C. K., & Manstead, A. S. (2004). The interpersonal effects of anger and happiness in negotiations. *Journal of Personality and Social Psychology, 86(*1), 57-76. https://doi.org/10.1037/0022-3514.86.1.57

Volkova, S., & Bachrach, Y. (2015). On predicting sociodemographic traits and emotions from communications in social networks and their implications to online self-disclosure. *Cyberpsychology, Behavior, and Social Networking, 18*(12), 726-736. https://doi.org/10.1089/cyber.2014.0609

Waasdorp, T. E., & Bradshaw, C. P. (2015). The overlap between cyberbullying and traditional bullying. *Journal of Adolescent Health, 56*(5), 483-488. https://doi.org/10.1016/j.jadohealth.2014.12.002

Wachs, S. (2012). Moral disengagement and emotional and social difficulties in bullying and cyberbullying: Differences by participant role. *Emotional and Behavioural Difficulties, 17*(3-4), 347-360. http://dx.doi.org/10.1080/13632752.2012.704318

Welsh, M., Parke, R. D., Widaman, K., & O'Neil, R. (2001). Linkages between children's social and academic competence: A longitudinal analysis. *Journal of School Psychology, 39*(6), 463-482. https://doi.org/10.1016/S0022-4405(01)00084-X

Whittaker, E., & Kowalski, R. M. (2015). Cyberbullying. *International Encyclopedia of the Social & Behavioral Sciences* (Second Edition) (pp. 638-644). New York, NY: Elsevier. https://doi.org/10.1016/B978-0-08-097086-8.64105-3

Ybarra, M. L., Espelage, D. L., & Mitchell, K. J. (2007). The co-occurrence of Internet harassment and unwanted sexual solicitation victimization and perpetration: Associations with psychosocial indicators. *Journal of Adolescent Health, 41*(6), S31-S41. https://doi.org/10.1016/j.jadohealth.2007.09.010

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(*7), 1308-1316. https://doi.org/10.1111/j.1469-7610.2004.00328.x

Zych, I., Farrington, D. P., Llorent, V. J. , & Ttofi, M. M. (2017). *Protecting children against bullying and its consequences*. New York, NY: Springer. https://doi.org/10.1007/978-3-319-53028-4

Zych, I., Ortega-Ruiz, R., & Marín-López, I. (2017). Emotional content in cyberspace: Development and validation of E-motions Questionnaire in adolescents and young people. *Psicothema, 29*(4), 563-569. https://doi.org/10.1037/t68291-000

Zych, I., Ortega-Ruiz, R., Muñoz-Morales, R., & Llorent, V. J. (2018). Dimensions and psychometric properties of the Social and Emotional Competencies Questionnaire (SEC-Q) in youth and adolescents. *Revista Latinoamericana de Psicología, 50*(2), 98-106. https://doi.org/10.14349/rlp.2018.v50.n2.3

Table 1

Relationships among E-motions, Social and Emotional Competencies, Cybervictimization and Cyberperpetration

	1	2	3	4	5	6	7	8	9	10	11
1.Self-awareness	1										
2. Self-management and motivation	.35**	1									
3.Social awareness and prosocial behavior	.36**	.30**	1								
4.Responsible decision making	.28**	.29**	.31**	1							
5.Social and emotional competencies	.71**	.65**	.75**	.67**	1						
6.E-motional expression	.06**	-.01	.12**	-.02	.07**	1					
7.E-motional perception	.13**	.06*	.20**	.05*	.17**	.53**	1				
8.Facilitating use of e-motions	.03	.03	.10**	.02	.07**	.66**	.52**	1			
9.Understanding and Management of e-motions	.19**	.09**	.22**	.10**	.22**	.53**	.61**	.58**	1		
10.E-motions total	.14**	.05	.20**	.04	.17**	.80**	.75**	.85**	.88**	1	
11.Cybervictimization	-.04	-.07**	-.08**	-.08**	-.10**	.19**	.11**	.21**	.10**	.19**	1
12.Cyberperpetration	-.07**	-.08**	-.10**	-.12**	-.14**	.13**	.09**	.16**	.04	.13**	.67**

Note. Pearson r correlations.
*p < .05; **p < .01.

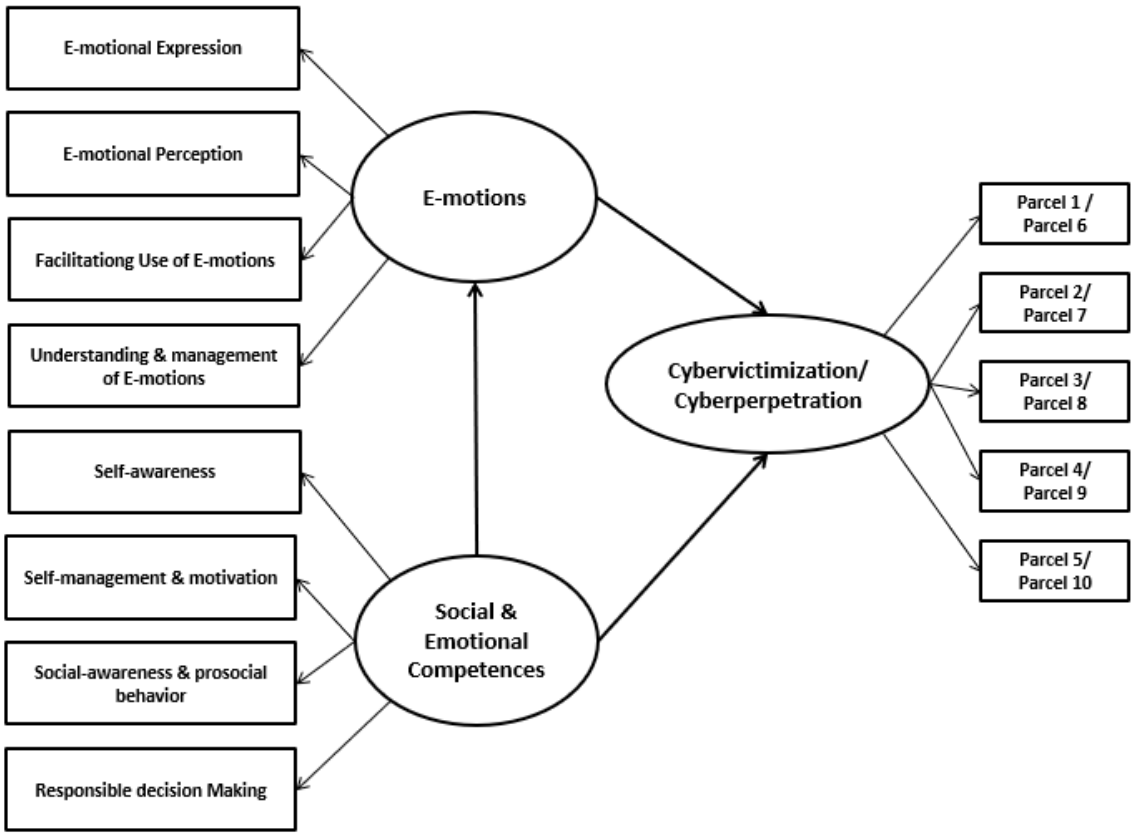

Figure 1. Structural equation model with e-motions and social and emotional competencies as predictors of cybervictimization and cyberperpetration with direct and indirect relationships among variables.

Note. Cybervictimization and cyberperpetration models were estimated separately and are shown here together for parsimony. Parcels 1 to 5 belong to cybervictimization and parcels 6 to 10 belong to cyberperpetration.

Table 2

Unstandardised (B) and Standardised (β) Estimates in the final structural equation model of cybervictimization and cyberperpetration for both males and females

	Males			Females		
	B	SE	*β*	B	SE	*β*
E-motions → Cybervictimization	0.06	.007	.26***	0.06	.007	.25***
Social and Emotional Competencies → Cybervictimization	-0.16	.030	-.17***	-0.16	.030	-.17***
Social and Emotional Competencies → E-motions	1.01	.191	.24***	0.55	.175	.13**

E-motions → Cyberperpetration	0.03	.004	.21***	0.03	.004	.21***
Social and Emotional Competencies → Cyberperpetration	-0.13	.017	-.24***	-0.13	.017	-.24***
Social and Emotional Competencies → E-motions	1.01	.189	.24***	0.56	.174	.14**

Note. ** $p < .01$; ***$p < .001$

Table 3

Results of the logistic regression on cyberbullying roles compared to uninvolved, predicted by age, gender, Social and Emotional Competencies and E-motions

	Cyberperpetrators (N=61)				*Cybervictims (N=180)*				*Cyberbully/ victims(N=160)*			
	B	S.E.	p	OR (95%CI)	B	S.E.	p	OR (95%CI)	B	S.E.	p	OR (95%CI)
Age	0.19	.09	.05	1.21 (.99,1.47)	0.04	.06	.50	1.04 (.92,1.17)	0.11	.06	.08	1.12 (.98,1.26)
Gender	0.40	.28	.15	1.50 (.87,2.59)	-0.01	.17	.96	.99 (.72,1.37)	0.72	.18	.00	**2.05 (1.42,2.94)**
Self-awareness	-0.01	.05	.91	.99 (.89,1.11)	-0.01	.03	.75	.99 (.92,1.06)	0.02	.04	.60	1.02 (.95,1.09)
Self-management and motivation	-0.02	.06	.68	.97 (.87,1.10)	0.04	.04	.32	1.04 (.96,1.13)	-0.04	.04	.35	.96 (.89,1.04)
Social awareness and prosocial behavior	0.03	.04	.48	1.03 (.94,1.13)	0.02	.03	.54	1.02 (.96,1.07)	-0.05	.03	.06	.95 (.90,1.00)
Responsible decision making	-0.08	.05	.10	.92 (.84,1.02)	0.06	.03	.05	1.07 (.99,1.14)	-0.11	.03	.00	**.90 (.84,.96)**
E-motional expression	0.05	.04	.26	1.05 (.96,1.15)	-0.05	.03	.05	.95 (.90,1.01)	0.11	.03	.00	**1.11 (1.05,1.18)**
E-motional perception	0.18	.06	.00	**1.20 (1.07,1.34)**	-0.01	.03	.85	.99 (.93,1.06)	-0.03	.04	.48	.97 (.90,1.05)
Facilitating use of e-motions	0.04	.03	.17	1.05 (.98,1.12)	0.06	.02	.01	**1.06 (1.02,1.10)**	0.03	.02	.12	1.03 (.99,1.08)
Understanding and management of e-motions	-0.08	.02	.00	**.92 (.88,.97)**	0.01	.01	.57	1.01 (.98,1.04)	-0.01	.02	.62	.99 (.96,1.02)
Nagelkerke R^2	.08				.02				.10			
χ^2 (df)	35.90 (10)**				19.51 (10)**				79.64 (10)**			

Note. This analysis have been carried out in comparison to uninvolved (N= 1344; N=1225; N=1245, respectively). B = Unstandardized regression coefficients; SE = Standard error; β=Standardized regression coefficients.
*$p < .05$; **$p < .01$.