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Cyberbullying victimization in higher education: an exploratory analysis of its association with social and emotional factors.

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Abstract

Few studies have analyzed cyberbullying victimization among university students in comparison to research conducted in other educational levels. The main purpose was to analyze the associations between the cyberbullying victimization and social and emotional factors such as involvement in traditional bullying victimization and perpetration, loneliness, self-esteem and perceived acceptance by friends. The results from a sample of 243 university students from social sciences confirmed the presence of cyberbullying victimization in the university context. Logistic regression revealed that perceived acceptance by peers was found to be significantly associated with cyberbullying victimization, such that those with low perceived acceptance were most likely to report experience of cyberbullying. Involvement in traditional bullying victimization during previous educational levels was also a risk factor for cyberbullying victimization, such that as involvement in traditional victimization increase, likelihood of cyberbullying victimization increases. Research and practice implications are discussed.

Key words: cyberbullying; bullying; higher education; loneliness; self-esteem; perceived acceptance.

1. Introduction

In recent years, given the increase in the use of ICTs across the globe, concern has been growing among researchers, authorities and practitioners about the Internet's potential for what seems to be an evolved manifestation of traditional bullying. Cyberbullying is defined as "any behavior performed through electronic or digital media by individuals or groups that repeatedly communicates hostile or aggressive messages intended to inflict harm or discomfort on others" (Tokunaga, 2010, 278). Like traditional bullying, cyberbullying has been described as an aggressive act characterized by imbalance of power, negative intentions on the side of perpetrator and repetition. Research has provided evidence that being the target of cyberbullying influences mental health increasing the risks of psychological and social problems (David-Ferdon & Hertz, 2007; Tsitsika et al., 2015). Indeed, the National Institute of Health (2010) reported that the impact of the cyberbullying could be even more damaging than traditional bullying, due to its own characteristics: 1) cyberbullying may reach a large audience rapidly; 2) it is difficult to escape from cyberbullying because it happens wherever the victim goes online; 3) perpetrators do not have to deal with the immediate emotional effects on their victim because they are separated by technology; and 4) victims have higher difficulties to escape from the perpetrators' actions given anonymity and the widespread diffusion of the victimization over the Internet (Slonje, Smith & Frisén, 2013).

Although there is a growing body of research about cyberbullying among primary and secondary school students, cyberbullying among university students has been less explored, and most of the studies conducted to date have attempted to know the prevalence of cyberbullying behaviors in higher education institutions without analyzing risk or protective factors (Crosslin & Golman, 2014; Smith & Yoon, 2013).

For that reason, this article focuses on the issue of cyberbullying victimization at one Spanish university analyzing how cyberbullying victimization is associated with previous involvement in traditional bullying and also with different social and emotional factors.

1.1. Cyberbullying prevalence in higher education

Qualitative research has revealed that many university students do not believe cyberbullying is a serious problem in higher education and assure its incidence is lower in comparison to other educational levels (Baldasare, et al., 2012; Crosslin & Golman, 2014). Nevertheless, when asked about specific behaviors, nearly all admit they had some personal experiences at university. In this sense, university students believe that cyberbullying at high school is geared by appearance differences or hierarchy inside peer groups, whilst cyberbullying at university may originate in issues regarding sexuality, politics or social problems, which turn to be aggressive and finally result in cyberbullying (Kota, Schoohs, Benson & Moreno, 2014).

Quantitative research has shown that the prevalence of cyberbullying victimization in higher education ranges from 8% to 56% and may include receiving threatening text messages, sexually harassing messages, spreading rumors and faking someone's identity. As shown in Table 1, the majority of the studies analyzing cyberbullying among university students have been conducted in the United States, followed by European countries (9 studies, with 4 in Turkey and 2 in Spain). The first study was conducted by Finn in 2004, whose results revealed that between 10% and 15% of the 339 participants from the University of New Hampshire had experienced cyberbullying through e-mail and instant messaging platforms. Later, starting in 2009 and mainly in 2010, there was an increase in studies regarding cyberbullying in

different universities from United States after the death of two students that ended their lives as a result of the attacks they were receiving via the Internet. Studies in other countries began to appear from 2011 and, specifically in Spain, from 2015.

Victimization prevalence rates in Spain are among the highest median with percentages between 52.7% and 56%.

Table 1.

Summary of the studies analyzing cyberbullying prevalence among university students

Authors	Country	Participants	Incidence (%)		
			Perpetrators	Victims	Mixed
Akbulut, & Eristi (2011)	Turkey	254		81	
Aricak (2009)	Turkey	695		36.7	17.7
Caravaca et al, (2016)	Spain	543		52.7	
Dilmac (2009)	Turkey	666		53	
Elipe, Mora-Merchán, Ortega-Ruiz, & Casas (2015)	Spain	636		54	
Englander, Mills, & McCoy (2009)	USA	283	3	8	
Faucher, Jackson, & Cassidy (2014)	Canada	1733		55 ¹	
Hoff, & Mitchell (2009)	USA	351		56	
Kokkinos, Antoniadou, & Markos (2014)	Greek	430	14	11	33
Kraft, & Wang (2010)	USA	471		10	
MacDonald, & Roberts-Pittman (2010) ¹	USA	439	9	25	
Mateus, Veiga, Costa, & das Dore (2015)	Portugal	519	8	27.4	
Molluzo, & Lawler (2011)	USA	110	3.6	9	

Paullet, & Pinchot (2014)	USA	168		9	
Schenk, & Fremouw (2012)	USA	799		8.6	
Schenk, Fremouw, & Keelan (2013)	USA	799	7.5		2.4
Selkie, Kota, Chan, & Moreno (2015)	USA	265	3	17	7.2
Smith, & Yoon (2013)	USA	276		10	
Tomsa, Jenaro, Campbell, & Neacsu (2013)	Bulgaria	92	2.2	8.7	
Turan, Polat, Karapirli, Uysal, & Turan (2011)	Turkey	579		60	
Walker, Sockman, & Koehn (2011)	USA	120		11	
Washington (2014)	USA	140		12	
Whittaker, & Kowalski (2015) ¹	USA	244	12	18.2	
Zalaquett, & Chatters (2014)	USA	613		19	

¹ The data corresponds to social networks

Prevalence rates across the globe show that cyberbullying does not take place in certain parts of the world exclusively. Cyberbullying is a global phenomenon cutting across cultural groups and contexts (Ang, Huan, & Florell, 2014). Nevertheless, prevalence of cyberbullying vary from country to country. This variability is a consequence of the influence of cultural factors, but also due to different methodological issues (Brochado, Soares & Fraga, 2016). First, the criterion used to consider participation in cyberbullying. For example, participants being asked if they were targets or perpetrators of specific events (e.g. Akbulut & Eristi, 2011; Faucher et al., 2014; Hoff & Mitchell, 2009) or participants being asked if they feel as victims or perpetrators of different behaviors (e.g. Mateus et al., 2015; Molluzo & Lawler, 2011; Schenk et al., 2013). Second, different cyberbullying measurement instruments used.

Some of them including only one question asking if participants were or were not involved in cyberbullying, whereas other instruments including different behaviors that participants should rate according with the frequency of their involvement. These last scales has been proved to find more affirmative answers among participants than those including a direct question about participation in cyberbullying. Third, differences in the period of time considered by researchers in what the cyberbullying took place: during participants' whole life (e. g. Akbulut & Eristi, 2011; Dilmac, 2009; Mateus et al., 2015), during the last year (e. g. Aricak, 2009; Faucher et al., 2014; Tomsa et al., 2013), the last six months (e. g. Zachilly & Valerio, 2011) or at the current time (e. g. Paullet & Pinchot, 2014).

The high variability among all the studies included in the review reveal that the heterogeneity compromise comparability across countries and we should not just transfer the knowledge gained in other countries to different cultural contexts. Additionally, the fact that there are few studies on cyberbullying among university students in Spain indicate the importance of investigate whether empirical evidence from other countries is generalizable to our country.

1.2. Theoretical framework and cyberbullying

The majority of cyberbullying research among university students has been mostly atheoretical and descriptive. Recently, different researches made specific predictions regarding the antecedents of cyberbullying derived from the socio-ecological theory (Bronfenbrenner, 1977) understanding that cyberbullying victimization is likely to originate or be maintained over time as a result of the interplay between intra- and inter-individual factors (Cross, Lester & Barnes, 2015; Moon et al.,

2016). Among these factors, emotional and social indicators seems to play an important role in cyberbullying dynamics (Chen, Ho & Lwin, 2016; Guo, 2016).

For this research we have adopted the systematic-developmental model for traditional bullying (Atlas & Pepler, 1998) to study factors that may contribute to the development of cyberbullying victimization. This theoretical perspective understand that bullying behavior is influenced by a number of factors including the individual characteristic of the victim, the relationship with peers and the context in which bullying unfolds. Analyzing all these factors we will be better equipped to address the problem of cyberbullying. Within the context of the present study, we examined the nature of cyberbullying victimization in relation to individual characteristics of the victim (self-esteem and feelings of loneliness) and peer relationships (traditional bullying involvement and social acceptance) in the university context.

These variables have been selected considering their relevance from a developmental perspective (Pepler & Cummings, 2016) but also they have been meaningful in previous research on bullying testing socio-ecological frameworks. For example, the research of Marsh et al. (2011) has shown that victimization in traditional bullying tend to be negatively related to multiple domains of self-concept theory, and the study of Vaughn et al. (2009) has shown that competent social behavior and peer acceptance constitute a multifaceted construct that explains social adjustment in peer groups, and may be applied to cyberbullying research as a form of maladjustment.

Self-esteem, feelings of loneliness and lack of social acceptance are some of the strongest correlates of traditional bullying victimization experiences (Navarro et al., 2015; Salmon, James & Smith, 1998). On the contrary, perpetration experiences are not always related with these same variables (Nansel et al., 2001; Peeters, Cillessen, & Scholte, 2010). For that reason this study has been focused on cyberbullying

victimization. The study examines whether known correlates of traditional bullying victimization, such as self-esteem or loneliness, are similar for cyberbullying victimization among higher education students. However, most published research about the associations of cyberbullying with psychosocial maladjustment has reported data from middle and high school students. Thus, it is important to delineate what psychosocial factors are associated with victimization among university students in order to inform and lead evidence-based preventions and interventions against cyberbullying. As Schenk and Fremouw (2012) stated, we need to know what makes victims vulnerable in order to carry out proper prevention and to provide them with coping strategies.

1.3. Associations among traditional bullying and cyberbullying.

Among the inter-individual factors that have been shown to be related with cyberbullying victimization, previous involvement in traditional bullying seems to be a risk factor among adolescents. Several studies have shown that there is a clear, but not perfect, overlap between involvement between the two types of bullying (Hemphill et al., 2012; Kowalski & Limber, 2013). Indeed, previous research has found that students' role in traditional bullying predicted the same role in cyberbullying (Baroncelli & Ciucci, 2014; Hemphill et al., 2012; Jang, Song & Kim, 2014; Raskauskas & Stoltz, 2007). Hinduja and Patchin (2008) showed that the most robust predictor of cyberbullying in adolescence was the experience with off-line bullying as an offender or victim. Those youth who were bullied at or near school were also more likely to be victim of cyberbullying (see also Hinduja & Patchin, 2010). Cassidy, Jackson and Brown (2009) found that 64% of respondents from grades 6 through 9 indicated that their personal experience with cyberbullying began at school, often offline, and then continued online once they got home. Participants described cyberbullying as a reaction

to an incident that happened on the school grounds. Kowalski, Morgan and Limber (2012) using path analysis in a sample of students in grade 6 through 12 found that traditional bullying continued after schools hours through the use of technology. More frequent traditional bullying perpetration and victimization were associated with higher frequency of their electronic counterparts. However, previous involvement in online bullying does not predict involvement in traditional bullying (Del Rey, Elisei & Ortega-Ruiz, 2012). These findings lend support to the idea that cyber and traditional bullying may reflect different methods of enacting a similar behavior (cause harm to others) and the form (offline vs. online) of bullying may be less important than the conduct (Waasdorp & Bradshaw, 2015).

Nevertheless, the connection between these two types of bullying has been less explored among university students. MacDonald and Roberts-Pitman (2010) found a correlation between bullying and cyberbullying behaviors, with ranges of between .22 and .65, among university students in the USA. Tomsa et al. (2013), in a study with university students from Bulgaria, reported that 31.5% of cyberbullying victims also suffered traditional bullying. More recently, Caravaca et al. (2016) in a sample of Spanish university students, found that 40.7% of traditional victims were also victims of cyberbullying. These findings were consistent with previous literature about studies with middle school and high school students.

Cyberbullying may increase with age due to less parental supervision of the Internet use and to a greater access to information and communication technologies as youth grow older (Garaigordobil, 2015; Kiriakidis & Kavoura, 2010; Walrave & Heirman, 2011). Additionally, different researchers have explained that there seems to be a continuation of cyberbullying incidents after high school into higher education (Chapell et al., 2006; Faucher et al., 2014; Kraft & Wang, 2010; Zacchilli & Valerio,

2011). However, the literature on cyberbullying has presented few contributions regarding the association between bullying behaviors in different educational levels. Data from USA has shown that there is a statistically significant relationship between being a victim of cyberbullying at university and having been bullied at high school (Pauellet and Pinchot, 2014). Furthermore, Zalaquett and Chatters (2014) found that half of the victims of cyberbullying at university had experienced cyberbullying at high school in the USA.

The present study respond to the need to investigate how previous and actual involvement in traditional bullying can be associated with cyberbullying victimization in higher education.

1.4. Self-esteem and cyberbullying

Self-esteem is defined as a positive or negative orientation toward oneself, as an overall evaluation of one's worth or value (Rosenberg, 1979). There is a considerable body of research to suggest that traditional bullying victims in primary and secondary schools have poor self-esteem (O'Moore & Kirkham, 2001; Fredstrom, Adams & Gilman, 2011). Previous research has also demonstrated that individuals with low self-esteem are more frequently victimized than individuals with high self-esteem (Egan & Perry, 1998).

Exploring the associations between cyberbullying victimization and self-esteem Patchin and Hinduja (2010) found that cyberbullying victims scored significantly lower in global self-esteem than non-involved youths. Different studies have also reported that self-esteem is a significant predictor of cyberbullying victimization, whereas a strong self-esteem acts as an important protective factor against victimization in adolescence (Brewer & Kerslake, 2015; Jacobs, Dehue, Völlink, Lechner, 2014). It has been

suggested that individuals with low self-esteem may behave in a manner that signal feelings of cautiousness, implying that they will not retaliate when offended or they will not defend themselves effectively (Tsaousis, 2016).

The relationship between cyberbullying victimization and self-esteem has been less explored among higher education students. Zacchilli & Valerio (2011) conducted correlational analysis to test the association between self-esteem and cyberbullying victimization in a college student sample. They did not find significant relationships between being a victim and one's reported self-esteem. Brack & Caltabiano, (2014) analyzed differences in self-esteem among victims and non-victims of cyberbullying in a sample of young Australian adults. It was of interest that those individuals not involved in cyberbullying behaviour demonstrated similar levels of self-esteem to those individuals who were classified as cyber-victims. Due to the mixed results between adolescents and young adults' samples, and also considering that studies in higher education samples were mostly exploratory and analyzed self-esteem as a consequence of cyberbullying, it is important to follow this line of inquiry.

Social acceptance and cyberbullying.

Social acceptance refers to the degree to which youth are accepted or rejected by their peers. It involves having someone that provides support and wellbeing. Prior research in traditional bullying has shown that lack of acceptance by peers can lead to victimization (Kendrick, Jutengren, & Stattin, 2012) and has systematically found that victims of bullying have fewer friends in comparison to bullies and uninvolved youths (Eslea et al., 2004), and report more difficulties in maintaining friendships (Schäfer et al., 2004). In Spain, Buelga, Cava and Musitu (2012a) found that perceived acceptance by peers was a protective factor for traditional bullying victimization in a sample of

high school students. On the contrary, less accepted youths, or rejected ones, were at greater risk of being victimized in offline settings.

Research specifically examining the relationship between peer acceptance and cyberbullying is relatively new and has been focused on analyzing the role of social support in adolescent' samples. In the USA, Williams and Guerra (2007) found that youth perception that friends their age are caring and helpful is significantly associated with lower self-reported online victimization among adolescents. Recent research with Spanish adolescents has found that cyberbullying victimization is associated with lack of social support and difficulties in the social domain (Ortega-Barón, Buelga & Cava, 2016; Navarro, Larrañaga & Yubero, 2016). It has been suggested that cyberbullies choose their cybervictims from among socially vulnerable boys and girls who are more socially isolated and hence less able to defend themselves (Romera, Cano, García-Fernández, & Ortega-Ruiz, 2016).

Little research has been conducted with higher education students and the existent research has been mostly quality in nature and focused on traditional bullying. The study conducted by Meriläinen, Puhakka & Sinkkonen (2015) in a Finnish university gathering students' suggestions for how to eliminate bullying at universities showed that students believe that emotional support from university authorities and peers will be an effective strategy to deal with traditional bullying. In the same line, the qualitative study carried out by Myers & Cowie (2013) with British university students revealed that social support is crucial in the solution of bullying problems. Interestingly, a study conducted with university students in the USA (Hot et al., 2014) reported that traditional bullying was not associated with perceptions of social life at college, suggesting that entry into the college environment might provide an opportunity for

students with histories of bully victimization to experience resilience through the formation of new supportive relationships.

As far as we know, the only study that has analyzed a domain of social acceptance in relation to cyberbullying victimization has been the one carried out by Dilmaç (2009) in Turkey. He analyzed psychological needs as predictive factors of cyberbullying among university students and found that students who were not involved in cyberbullying had a greater social support network. Considering the lack of research in this area, it is certainly important to investigate the associations between peer acceptance and cyberbullying victimization among university students.

1.5. Loneliness and cyberbullying

Loneliness has been conceptualized as perceived social isolation rather than physical separation from others (Brewer & Kerlake, 2015). Youth who experienced feelings of loneliness may go online to connect with others and reduce this perceived isolation. However, those who spend time on the Internet looking for companionship are also exposed to a number of potential risk, such as cyberbullying victimization. Theoretically, it is possible that feelings of loneliness could imply longer periods of time spent online to avoid isolation, thus increasing the possibility of receiving online attacks. However, few studies have specifically addressed the relationship between cyberbullying and loneliness, and the existent studies has been conducted with adolescent samples.

Among these studies, Şahin (2012) reported that loneliness was a meaningful predictor of cyberbullying victimization in a sample of Turkish secondary school students. Olenik-Shemesh, Heiman and Eden (2012) found, among Israeli adolescents, that loneliness was a significant predictor of cybervictimization. However, Brighi,

Guarini, Melotti, Galli and Genta (2012) found that loneliness was a significant predictor of traditional victimization but not for cyberbullying victimization among Italian adolescents. In the same line, Brewer & Kerlake (2015) found that loneliness was not an individual predictor of cyberbullying victimization among British adolescents. In Spain, Larrañaga, Yubero, Ovejero & Navarro (2016) reported that cyberbullying victims experience more loneliness than non-victims. However, loneliness was associated only with cyberbullying in the interaction with problems communication with the mother reported by adolescents. Further investigation in older samples is required to know the associations between loneliness and cyberbullying victimization among higher education students.

1.6. Overview of the present study

The first purpose of the current study was to examine the associations of cyberbullying victimization with traditional bullying among higher education students in Spain. The hypothesized association between traditional bullying and cyberbullying have already been demonstrated in previous research; however, as previously mentioned, it is unclear how cyberbullying victimization in higher education is associated with traditional bullying suffered or perpetrated in previous educational levels.

Derived from the previous literature and theoretical postulations, the second purpose of the present study was to analyze the associations of revised social and emotional factors (self-esteem, loneliness and perceived acceptance by peers) with cyberbullying victimization in higher education. As far as we know, published studies analyzing these relationships has been mostly conducted with adolescent samples. Certainly, psychosocial risk factors for cyberbullying in adolescence may make youth also susceptible to suffer cyberbullying in higher education, but it is necessary to

examine this question more carefully to understand whether it is possible to transfer previous findings with high schools students to university students, especially in Spain where seems to be a dearth of research concerning cyberbullying at this educational level. Additionally, results from the available studies are mixed, further researcher is needed in order to understand the association between self-esteem, loneliness, social acceptance and cyberbullying victimization in higher education.

This study extends the existing literature by: analyzing the association of bullying behaviors that took place in different educational levels, specifically how cyberbullying victimization is associated with traditional bullying suffered or perpetrated in primary and secondary schools; analyzing previously identified cyberbullying correlates during adolescence in a sample of university students; contributing to the database of youth in higher education institutions since most cyberbullying Spanish studies have included younger study samples.

Therefore, based on theoretical relationships and the reviewed literature the following hypothesis were examined:

Hypothesis 1. Traditional bullying suffered or perpetrated in previous educational levels will be positively associated with cyberbullying victimization in higher education.

Hypothesis 2. Traditional bullying suffered or perpetrated in higher education will be positively associated with current cyberbullying victimization.

Hypothesis 3. Poor self-esteem will be positively associated with cyberbullying victimization.

Hypothesis 4. Perceived acceptance by friends will be negatively associated with cyberbullying victimization.

Hypothesis 5. Loneliness will be positively associated with cyberbullying victimization.

2. Method

2.1. Participants

Participants were 243 undergraduate students, including 78 men and 165 women, ranging in age from 19 to 40 ($M = 21.33$; $SD = 3.08$). The imbalance in the gender distribution was due to the student population in the university where female students constitute approximately 70% of the total student body. Following Institutional Review Board approval, participants were recruited through classes offered in the academic year 2014-15 at the University of Castilla-la Mancha in Cuenca, a small central Spanish university. All students were attending social sciences degrees. 20.6% of the participants were enrolled in Social Education studies, 50.2% in Social Work and 29.2% in Law. Regarding their degree year, 40.5% were in year 2, 30.2% were in year 3 third year and 29.3% in year 4. Participation was voluntary.

2.2. Instruments

Confirmatory factor analysis were used to test instrument's validity. Normed Fit Index (NFI), Non-Normative Fit Index (NNFI), Comparative fit index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used. For the NFI, NNFI and the CFI, values over .90 indicate an acceptable fit. Values on the RMSEA less than .08 indicate an acceptable fit (Byrne, 2006; Hu, & Bentler, 1999).

2.2.1. Cyberbullying victimization

The cyberbullying victimization questions were devised by using items from the Spanish measure "*Escalas de victimización a través de Internet - Internet Victimization Scales*" (Buelga, Cava & Musitu, 2010; Buelga, Cava & Musitu, 2012b). The scale used is a 10-item self-report measure where participants indicated how often they had become victims of each behavior via the Internet within the last six months. Items were scored on a 4-point scale (1 = *Never*, 2 = *Once a month*, 3 = *Once a week*, 4 = *Several times a week*). Participants first read the definition of cyberbullying provided by Tokunaga (2010), as noted in the Introduction. After reading the definition, participants rated each behavior. Example items were "They have told lies or rumors about me", "Photos or videos of me or my family have been posted or manipulated without my consent", and "They have said, sent or done dirty things to annoy me". Confirmatory factor analysis (CFA) showed that the standard measurement model fit the datum well: CFI 0.97, NFI 0.96, NNFI 0.95, RMSEA 0.07. The internal consistency coefficient, measured through Cronbach's Alpha, was .87.

2.2.2. Traditional bullying

The bullying/victimization questions were devised by using items from the measure "*Instrument to assess the incidence of involvement in bully/victim interaction at school*" (Rigby & Bagshaw, 2003). This measure included five items to assess peer victimization by asking students "how often have you been bullied by your peers during the last year?" Students responded to the following items: someone pushed, grabbed or hit me (direct physical aggression), someone broke or hid my belongings (indirect physical aggression), someone called me names or insulted me (direct verbal aggression), someone said mean things behind my back or spread rumors about me (indirect verbal aggression), someone ignored me or didn't let me participate in games

and other activities (social exclusion). Responders rated each item on a 4-point scale (0 = *Never*, 1 = *Once a month*, 2 = *Once a week*, 3 = *Several times a week*). The same five items were given for the bullying scale as students were asked “how often have you bullied someone in the last year?” Information was collected concerning the education level at what bullying took place: previous educational levels (primary and secondary education) and/or higher education. Confirmatory factor analysis (CFA) showed that the standard measurement model fit the datum well for the victimization scale: CFI 0.99, NFI 0.97, NNFI 0.99, RMSEA 0.00; and also for the perpetration scale: CFI 0.99, NFI 0.97, NNFI 0.95, RMSEA 0.05. The reliability of the subscale of victimization for this study reached a Cronbach alpha value of .74; in the scale of perpetration the value was .80.

2.2.3. Self-Esteem

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) consists of 10 items where participants are asked to mark how often each item describes what they think and/or the way they feel on a Likert scale of 1 (*Never*) to 4 (*always*). Example item: “I feel that I am a person worthy of esteem, at least to the same extent as others”. Confirmatory factor analysis (CFA) showed that the standard measurement model fit the datum well: CFI 0.97, NFI 0.95, NNFI 0.95, RMSEA 0.08. Scale reliability in this study reached a Cronbach Alpha value of .82

2.2.4. Loneliness

The UCLA Loneliness Scale, version 3 (Russell, 1996) was used. The scale contains 20 items assessing the individual’s subjective feelings of loneliness. Participants indicated how often each item describes what they think and/or the way they feel on a Likert scale of 1 (*Never*) to 4 (*Often*). Statements include “I am unhappy

doing so many things alone”. Confirmatory factor analysis (CFA) showed that the standard measurement model fit the datum well: CFI 0.97, NFI 0.95, NNFI 0.95, RMSEA 0.07. Scale reliability in this study reached a Cronbach Alpha value of .75

2.2.5. Peer acceptance by friends

Perceived Acceptance Scale (*PAS*; Brock, Sarason, Sanghvi & Gurung, 1998) was used. Concretely, items corresponding to the subscale of relationships with friends (e.g., “I trust my secrets to my friends”; “My friends usually trust my decisions”) were selected for this study. Participants had to answer how often each item describes what they think and/or the way they feel on a Likert scale of 1 (*never*) to 4 (*always*). Confirmatory factor analysis (CFA) showed that the standard measurement model fit the datum well: CFI 0.98, NFI 0.97, NNFI 0.96, RMSEA 0.08. Scale reliability in this study reached a Cronbach Alpha value of .87.

2.3. Procedure

An announcement was placed on the university’s website. Students who indicated by e-mail that they would like to participate were then asked to report to a classroom on a specific day and time to complete the questionnaires. The survey was conducted in an on-campus computer classroom where only the participants and two researchers were present. Each degree was asked to report in the classroom in different dates. They could attend a morning or afternoon session. Participants completed paper consent forms in order to participate and were given the opportunity to ask questions. The survey was computer-based and participants were directed to the proper web-link for completing the survey. Questionnaires were answered anonymously with no information to identify individual responses. The survey required approximately 20 minutes to be completed. Students were not compensated in any way. After completing

the instruments, participants were given the opportunity to ask questions again, and thanked. All subjects were offered feedback on general results of the study, and all gave their informed consent for the release of their test scores for research purposes.

2.4. Data analysis

First, the general descriptive statistics about cyberbullying victimization were analyzed. The data on the distribution of participants among cybervictimization experiences were summarized as percentages. Gender differences in cyberbullying victimization were analyzed using a Chi-square test. Second, Pearson correlations were performed between cyberbullying victimization, involvement in traditional bullying in different educational levels, self-esteem, loneliness and perceived acceptance by peers. Third, Student's t-tests were conducted to examine the differences between victims and non-victims for the social and emotional factors (self-esteem, loneliness and perceived acceptance by peers). Finally, the odds ratios (OR) with a 95 % confidence interval were computed by a logistic regression analysis to establish which of the above-described factors better associated with cyberbullying victimization. To obtain such information, the forward stepwise method was used in the logistic regression analysis to eliminate the independent variables that did not determine statistically significant cyberbullying victimization. Dependent variable was dichotomized, taking standard deviation from the mean as a criterion. All the analyses were done with the SPSS 22.0 statistical software.

3. Results

3.1. Cyberbullying victimization prevalence

The cyberbullying victimization form that students suffer most frequently is the dissemination of lies and rumors online (36%); 9.1% have suffered quite a few or many

times in the last year (Table 2). There were no significant gender differences in cyberbullying victimization. Only in item 8 (“I have been told or sent things to bother me”) men reported a greater frequency. In fact, 2% reported that they had suffered this particular type of cyberbullying many times, and 5.9% several times. Whereas only 1.4% of the women ranked at these levels of response, $\chi^2= 10.00, p<.019$.

Table 2.

Percentages of cyberbullying victimization experiences

	Never	Sometimes	Several times	Many times
1. I have been insulted or ridiculed	81	15.3	2.9	0.8
2. I have been forced to do things I did not want to do, using threats	93.8	4.5	1.2	0.4
3. I have been called and nobody answered	75.5	16.2	6.2	2.1
4. Lies or false rumors have been told about me	64	26.9	4.1	5
5. My secrets have been shared with third parties	72.2	24.9	2.5	0.4
6. Photos or videos of me or my family have been distributed and/or manipulated without my permission	93.4	5	1.2	0.4
7. I have been threatened in order to scare me	91.3	7.9	0.4	0.4
8. I have been told or sent things to bother me	82.2	13.6	3.3	0.8
9. Someone has accessed my social networks or my private accounts without me being able to do anything about it	92.6	5.4	1.2	0.8
10. Someone has impersonated me to say or do things online	91.7	6.6	-	1.7

3.2. Bivariate Correlations

Pearson correlations between cyberbullying victimization, traditional bullying involvement, self-esteem, loneliness and perceived acceptance by peers are reported in Table 3. Positive correlations were found between cyberbullying victimization and traditional bullying victimization in primary school, secondary school and higher

education. Cyberbullying victimization correlated negatively with self-esteem and perceived acceptance by peers, but positively with loneliness.

Table 3. Correlation matrix among cyberbullying victimization and the study variables

	1	2	3	3	5	6	7	8
1. CV	–							
2. TBVPE	.203*	–						
3. TBVHE	.202*	.203**	–					
4. TBPPE	.006	.161*	.103	–				
5. TBPHE	-.094	.127*	.400**	.353*	–			
6. Self-esteem	-.152*	-.226**	-.152*	.055	.041	–		
7. Loneliness	.149*	.266**	.128	.134*	.102	.254**	–	
8. PAP	-.278**	-.260**	-.195**	-.232**	-.167**	.088	-.118	–

Note: CV = Cyberbullying Victimization; TBVP = Traditional Bullying Victimization in previous educational levels; TBVHE = Traditional bullying victimization in higher education; TBPP = Traditional bullying perpetration in previous educational levels; TBPHE = Traditional bullying perpetration in higher education; PAP = Perceived acceptance by peers. * $p < .05$; ** $p < .01$

3.3. Self-esteem, loneliness and perceived acceptance by peers between victims and non-victims of cyberbullying.

In order to establish the group of cyberbullying victims, participants' scores on the cyberbullying scale were used (minimum score 1, maximum of 45). The cut-off point used for this classification was 1 standard deviation above the mean. In previous studies, this procedure was deemed appropriate for fulfilling the characteristic frequency and intensity criteria of bullying behaviors (Buelga, Iranzo, Cava & Torralba, 2015). The students whose scores exceeded 1 standard deviation over the mean score on the cyberbullying scale were assigned to the group victims. The remaining students were assigned to the group of non-victims. Although this is a highly restrictive criterion, it better fits the emphasis placed on bullying and cyberbullying as repetitive behavior (Slonje & Smith, 2008).

T-tests were conducted to examine the differences in self-esteem, loneliness and perceived acceptance by peers between non-victims and cyberbullying victims. The

results are presented in Table 4. In comparison to non-victims, victims reported lower levels of self-esteem and perceived acceptance by peers. However, cyberbullying victims reported higher levels of loneliness than non-victims. These results suggest that cyberbullied university students experience more loneliness, have a worse self-esteem and perceive that are less accepted by peers than those students forming the non-victim group.

Table 4.

Mean differences in study variables according to the classification as victims or non-victims of cyberbullying

Variables	Non victims (n=204)		Victims (n=24)		t (1, 243)	d
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Self-esteem	1.66	1.80	0.97	1.36	2.27*	0.43
Loneliness	2.23	0.35	2.40	0.29	-2.54**	-0.52
PAP	3.27	0.49	2.97	0.63	2.70*	0.53

Note: PAP = Perceived acceptance by peers. ** $p < .01$; * $p < .05$

3.4. Logistic regression analyses

Table 5 presents the regression statistics for cyberbullying victimization. Cyberbullying victimization was associated with traditional bullying victimization in previous educational levels (primary school or secondary school), and perceived acceptance by peers. The overall data indicate that being a victim of traditional bullying prior to being in university and lack of perceived acceptance by peers increase the likelihood of cyberbullying victimization. Involvement in traditional bullying in higher education, self-esteem and loneliness were not significantly associated with cyberbullying victimization.

Table 5.

Logistic regression model predicting the association among reports of cyberbullying victimization, involvement in traditional bullying, self-esteem, loneliness and perceived acceptance by peers.

	B	S.E.	Wald	OR	95% C.I.	
					Lower	Upper
TBVPE	1.14	0.53	4.72	3.13**	1.11	8.77
TBVHE	0.68	0.56	1.48	1.98	0.65	5.98
TBPPE	-0.93	0.59	2.38	0.40	0.12	1.28
Self-esteem	-0.26	0.59	0.19	0.76	0.23	2.48
Loneliness	0.31	0.55	0.32	1.37	0.46	4.10
PAP	1.27	0.51	6.00	3.57***	1.29	9.87
Constant	-2.66	0.36	52.48	0.07		
-2 LL	136.38					
Nagelkerke R ²	0.150					

Model $\chi^2 = 17.28$; df = 6; $p < .001$, n=243

Note: TBVP = Traditional bullying victimization in previous educational levels; TBVHE = Traditional bullying victimization in higher education; TBPP = Traditional bullying perpetration in previous educational levels; PAP = Perceived acceptance by peers B = coefficient ; S.E = Standard Error; OR = Odds Ratio; C.I. = Confidence Interval; LL, log likelihood; ** $p < .01$; *** $p < .001$

4. Discussion

This paper presents the cyberbullying victimization data obtained with a sample of 243 university students. This study aimed to extend the body of research on cyberbullying victimization in higher education by examining the association among victimization, traditional bullying and different social and emotional factors, namely self-esteem, loneliness and perceived acceptance by friends.

4.1. Prevalence of cyberbullying victimization

Regarding prevalence of cyberbullying victimization, 9.8% of the surveyed higher education students (n = 24) reported that they had experienced cyberbullying. The prevalence was lower than that found by Elipe et al. (2015) with a wide sample of 638 undergraduate students from Andalusia (Spain) where 54% reported having experienced

some type of cybervictimization. Prevalence rate was also lower than that reported by Caravaca et al. (2016) where 52.7% of 543 undergraduate students from Murcia (Spain) were cyberbullied. The prevalence reported herein is similar to that found in international studies in the USA (see for example Paullet & Pinchot, 2014; Schenk & Fremouw, 2012).

However, as was noted before, comparing prevalence data is difficult given the differences among studies in terms of cyberbullying definition, the time frame in which victimization has occurred and the case selection procedure. In this study, the procedure followed to classify participants as victims was restrictive (participants' scores above 1 standard deviation above the mean). Prevalence rates will be higher in the present sample if victims will be classified as those participants that reported having experience at least one of the 10 listed types of cybervictimization. Nevertheless, research on this field is still particularly important, because even relatively small prevalence rates have harmful effects.

4.2. Associations among traditional bullying and cyberbullying victimization

Consistently with previous research (MacDonald & Roberts-Pitman, 2010; Kraft & Want, 2010), and in line with hypothesis 1, cyberbullying victimization was positively correlated with traditional victimization, which indicates a connection between both bullying types. However, correlational analysis did not show significant correlations between cyberbullying victimization and traditional bullying perpetration and non-significant associations were found in the logistic regression analyses between cyberbullying victimization and traditional bullying in higher education. These results does not indicate that traditional bullying and cyberbullying does not form part of the same subset of aggressive behaviour in higher education. Data suggest that youth are

not always involved in multiple types of bullying. Previous research has shown that there are significant differences between both two phenomena, such as the existence of a small group of cyber-victims who have not been involved in traditional bullying previously, and that students who are involved in both phenomena simultaneously do not always play the same role, as they may have opposing or multiple roles (Antoniadou & Kokkinos, 2015; Schultze-Krumbholz et al., 2015; Shin et al., 2016).

With regard to the association between cyberbullying victimization in higher education with traditional bullying experienced in previous educational levels, results indicate that cyberbullying in higher education is associated with traditional bullying victimization in primary and secondary schools, which partially confirmed hypothesis 2. These results are in line with previous research explaining that university may represent a context for continuity of cyberbullying episodes that have taken place in previous educational levels (Faucher *et al.*, 2014; Zalaquett & Chatters, 2014). This contradicts previous research suggesting that the college environment might provide an opportunity for previous victimized students to establish new relationships free of bullying (Holt et al., 2014). However, our data is cross-sectional and we cannot affirm that previous involvement in traditional bullying always predicts involvement in cyberbullying in the future. Therefore, longitudinal research should examine this relationship. Nevertheless, these results should bring to our attention the importance of extent prevention and intervention plans to higher education institutions.

4.3. Self-esteem and cyberbullying victimization

Results did not support hypothesis 3, since self-esteem was not significantly associated with cyberbullying victimization among university students. These findings contradict past evidence which suggested that self-esteem directly predicts cyberbullying victimization during adolescence (Şahin, 2012; Olenik-Shemesh et al., 2012) and it is

not in line with results from the meta-analysis conducted by Tsaousis (2016) showing that among adolescents there is a significant negative association between self-esteem and traditional victimization, although moderate in magnitude. However, the meta-analysis results have also shown that this relationship is stronger in early adolescence than late adolescence. Following this finding it could be argued that self-esteem may play a more crucial role in the first stages of adolescence, where bullying is more prevalent and there is an increase importance of peer relationships (Nansel et al., 2001), whereas the relationship between self-esteem and bullying in young adults could be weaker. It could also be argued that self-esteem can operate differently in peer relationships develop in online settings. Cyberspace characteristics can make difficult to see self-deprecating behaviors (e.g. sending signs that they will not retaliate when offended), not encouraging bullies to attack.

Nevertheless, results showed that victimized students in higher education report significant lower levels of self-esteem than non-victims. This finding contradict previous research showing that during adulthood cyberbullying victims report similar levels of self-esteem than non-victims (Brack & Caltabiano, 2012), but are in line with those other studies that pointed that low self-esteem may be a consequence rather than an antecedent of cyberbullying victimization (Patchin & Hinduja, 2010). Future research should examine cyberbullying victimization across all age groups to determine if this is related with self-esteem in a different way among adolescents compared to young adults.

4.4. Peer acceptance by peers and cyberbullying victimization

The logistic regression analyses indicated that there is a significant negative association between perceived acceptance by peers and cyberbullying victimization. This result supports hypothesis 4 and reveal that victimized students in higher education

are more likely to experience less closeness to friendship and perceive worse acceptance by peers. This finding is in line with previous findings regarding traditional bullying in adolescence, which have identified that less popular youths are at more risk of being victimized (Buelga et al., 2012a). The obtained result show that this assertion is applicable to online environments since university students who believe they are not accepted by their peers are more exposed to cyberbullying victimization. This relationship is particularly interesting since cyberbullying might include behaviors which dismiss perceived reputation, like using images of targets to devise a survey that asks others to vote for the ugliest or most unpopular students and/or using online forums to damage or defame the targets' reputation (Kift, Campbell & Butler, 2009). This finding is also in line with past research indicating that bullies do not randomly choose victims. Bullies chose individuals who seem more vulnerable than others because they are unable to defend themselves, are isolated and are not close to anyone in particular who can protect them (Mangope, Dinama, & Kefhilwe, 2012). This finding underscores the importance of analyzing previous identified risk factors for traditional bullying in cyberbullying.

4.5. Loneliness and cyberbullying victimization

Hypothesis 5, which states that loneliness is positively associated with cyberbullying victimization, was not supported. This result is in line with previous research in adolescence showing that loneliness is not an individual predictor of cyberbullying victimization (Brewer & Kerslake, 2015). However, it is not in line with the theoretical relationships between loneliness and cyberbullying that suggest that lonely youth spend more time in the Internet and, in consequence, are more exposed to cyberbullying victimization. Future research should examine if the relationship between

loneliness and cyberbullying victimization is mediated by the time university students spend online and whether they go online to create new relationships.

Nevertheless, we found that cyberbullying victims scored significantly higher in loneliness than students non-involved. This finding could indicate that loneliness is more a consequence than a predictor of the victimization but the cross-sectional data do not allow us to corroborate this assumption. Longitudinal research is needed in order to test this causal associations.

4.6. Limitations and future research

Among the limitations of the study, it is important to note that the design of the study is cross-sectional, which prevents us from establish causal relationships in the results found. As we noted before, future research should address this limitation conducting longitudinal analysis. It is also important to take into account that data has been obtained from self-reports measures. Therefore, the validity of the responses is limited, and may give rise to a certain information bias. Another limitation related with study design may be the selection of the cyberbullying victimization measure. Although the instrument has demonstrated good reliability and good internal consistency in the current sample, it was developed for adolescents. Thus, it should be considered that this may affect the construct validity of the questionnaire if used with older populations. However, this measure was chosen after first considering that research has shown a continuation of cyberbullying incidents after high school into higher education. Second, the questionnaire was developed with Spanish samples and it was considered that this measure may be closer to those experienced by Spanish students. Finally, sample was limited to a reduced number of university students from only one university and all

students were from the social sciences area. Future research it is also necessary to broaden the study sample in order to obtain a greater representation in the results.

Regarding future research, considering that the association between traditional bullying in previous educational levels with cyberbullying victimization has been confirmed, it is necessary further research in higher education analyzing the consequences and motivation behind this phenomenon. Furthermore, it is important to study the continuity of this behavior in other contexts like the work context and the world of adult relationships.

5. Conclusions

This study is one of the first to analyze cyberbullying victimization in a Spanish sample of university students and its relationship with social and emotional factors. Overall, results have shown that higher education students that have suffered previous traditional victimization and those who have a low perceived acceptance by friends were most likely to report experience of cyberbullying victimization. These findings underscore the importance of analyzing previous identified risk factors for traditional bullying in cyberbullying, and also highlights the importance of factors related with peer relationships.

Interventions should be developed by the Universities' Student Services. Specifically in cyberspace, we should emphasize not only prevention work with strategies to stop cyberbullying, but also cultivating relationships with people from whom victims can ask for advice or who will listen to their problems. To do that peer helper programs seem to be effective. In those programs, with an adequate training, students help to educate their classmates about using technology responsibly, cyberbullying and other technology issues. Through the dialogue with others peers

about online risks they may discuss about experience with cyberbullying and also about the strategies to avoid and address it (Sabella, Patchin & Hinduja, 2013).

Nonetheless, it seems to be imperative that all universities expand their harassment protocols, including cyberbullying behaviors and how to deal with them. These protocols must contain specific actions when cyberbullying episodes are detected, to avoid consolidation, and to minimize the impact on victims. Protocols should include therapeutic support and assure victim protection.

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Highlights

Cyberbullying antecedents in adolescence are analyzed in higher education.

Previous victimization increase the likelihood of cyberbullying in university.

Low perceived acceptance by peers was associated with cyberbullying.

Self-esteem and loneliness were not associated with cyberbullying.