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THESIS

Bullying and Cyberbullying in Adolescence and its relations with Life satisfaction, Loneliness, Depressive symptoms and Reputation

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Abstract

The present study investigated the relation between bullying, cyberbullying, life satisfaction, loneliness, depressive symptoms and reputation. Participants were 484 adolescents aged 11 to 17 years (55,2 % male) drawn from two public schools in Valencia (Spain). Statistical analyses were carried out to examine the relation between bullying and cyberbullying and life satisfaction, loneliness and depressive symptoms and to examine the presence of a mediator in these relationships. Results revealed that there is a significant negative correlation between bullying and life satisfaction and between cyberbullying and life satisfaction. The results also revealed that there is a significant positive correlation between bullying and loneliness and between bullying and depressive symptoms. Similar to bullying, a significant positive relation between cyberbullying and loneliness and between cyberbullying and depressive symptoms has been found. Furthermore, results revealed that the adolescent's own idea about his or her reputation in the peer group is a partial mediator in the relation between bullying and loneliness. In the relation between cyberbullying and life satisfaction, loneliness and depressive symptoms and in the relation between bullying and life satisfaction and depressive symptoms, the adolescent's own idea about his or her reputation was not found to be a mediator.

Introduction

Bullying among children has become a serious issue in schools today. A body of research has been done, showing that many children in elementary and high school are victimized by their peers (Due et al., 2005; Giovazolias, Kourkoutas, Mitsopoulou & Georgiadi, 2010; Smith & Gross, 2006; Undheim & Sund, 2010; Wolke, Woods, Bloomfield & Karstadt, 2000). These studies not only show that aggression between peers exists in most countries around the world, but also that it is affecting an extraordinary number of school-aged children (Eslea et al., 2003) and that this problem increased considerably in the last decades (Dilmaç, 2009; Schnohr & Niclasen, 2006; Cava, Musitu & Murgui, 2007).

It is well known that children who are bullied by their peers are at greater risk for internalizing problems (Perren, Dooley, Shaw & Cross, 2010). Several factors which play a role in the relation between bullying and the consequences for victims and the role of the reputation of the bully have been investigated (Buelga, Musitu, Murgui & Pons, 2008; Moreno, Estévez, Murgui, & Musitu, 2009). However, there are no studies in which the role of the adolescent's own idea about his or her reputation in the peer group is explored. According to Emler (1990, in: Hurrelman & Lösel) reputation might be defined as "a collective or community representation of the character and qualities of an individual member" (p.392), thus the way other people think about your qualities and character traits. Various authors have emphasized that reputation, popularity, leadership, and power among peers starts to have real significance in early adolescence (Carroll, Green, Houghton & Wood, 2003; Carroll, Hattie, Durkin, & Houghton, 2001) and that reputation plays a central role in the life of adolescents (Carroll et al., 2003; Emler & Reicher, 2005). In this study we focus on the relation between bullying and cyberbullying and life satisfaction, loneliness and depressive symptoms. Also, we focus on the role of the adolescent's own idea about his or her reputation in the peer group in these relations.

Bullying

The most commonly used definition of bullying is stated by Olweus (1999, in: Smith et al., 2002); “Bullying is characterized by the following three criteria: (1) it is aggressive behavior or intentional ‘harmdoing’ (2) which is carried out repeatedly and over time (3) in an interpersonal relationship characterized by an imbalance of power” (p.1120). In the literature, there have been defined three main forms of bullying; physical, verbal and relational (Bauman & Del Rio, 2006; Wang, Iannotti & Nansel, 2009). Physical bullying occurs when one or more students bodily attack one of their peers (Espelage & Swearer, 2003; Raskauskas, 2010), like hitting, kicking, pushing or shoving a child, and when this action is done in an unfriendly manner (Kristensen & Smith, 2003; Raskauskas, 2010). Verbal bullying involves insults or taunts such as teasing, name calling or saying mean and hurtful things (O’Moore & Kirkham, 2001; Raskauskas, 2010). Relational bullying is characterized by damaging peer relationships, exclusion, and/or manipulation of relationships (Carbone-Lopez, Esbensen & Brick, 2010; Crick & Grotpeter, 1995). In this study we combine these three forms of bullying.

Cyberbullying

Recently, due to the modern ways of communication, a new form of bullying emerged, namely cyberbullying (Buelga, Cava & Musitu, 2010; Cassidy, Jackson & Brown, 2009; Hoff & Mitchell, 2008; Kiriakidis & Kavoura, 2010; Slonje & Smith, 2008; Tokunaga, 2010). Cyberbullying is defined by Hinduja and Patchin (2009; in: Patchin & Hinduja, 2010) as “willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices” (p. 615). Patchin and Hinduja (2010) state that the most important elements of cyberbullying are: “(1) it is intentional, deliberate behavior and carried out repeatedly over time, (2) the target of cyberbullying experiences real pain (psychologically, emotionally or relationally) and (3) it is carried out using various electronic devices” (p. 615). Common forms of cyberbullying include sending threatening text messages, posting vicious messages or spreading gossip, rumours or secrets on social networking sites such as MySpace or Facebook, or uploading humiliating or unflattering pictures or videos to the internet without

permission (Cassidy et al., 2009; Mesch, 2009; Patchin & Hinduja, 2010; Perren et al., 2010; Raskauskas, 2010).

Consequences

Studies show that bullying and cyberbullying seriously affect the psychosocial well-being of the victim (Arsenault et al., 2008; Estévez, Musitu, & Herrero, 2005; Perren et al., 2010; Vanderbilt & Augustyn, 2010). The negative influence of traditional bullying on the psychosocial well-being of the victim has been studied for a couple of decades (Arseneault et al., 2008; Hodges & Perry, 1999; Storch et al., 2004; Vanderbilt & Augustyn, 2010). Recently, there have been several cases involving adolescents committing suicide after being cyberbullied (ABC News 2007, in: Tokunaga 2010; Hinduja & Patchin, 2010). After a number of those anecdotal cases unfolded in the media, the negative consequences of cyberbullying victimization as well have gained increased attention (Agatston, Kowalski, & Limber, 2007; Baker & Tanrikulu, 2010; Patchin & Hinduja, 2010; Perren et al., 2010). As a result of bullying or cyberbullying, the majority of victims display depressive symptoms, feelings of loneliness, decreases in self-esteem and feelings of anxiety (Hodges & Perry, 1999; Storch et al., 2004). Additionally, some studies found that these psychological and emotional problems even persist over time (Kumpulainen, Rasanen, & Puura, 2001; Roth, Coles, & Heimberg, 2002). In this study, the main focus is to analyze the relationships between bullying or cyberbullying and life satisfaction, feelings of loneliness, depressive symptoms and reputation.

Life satisfaction, loneliness, depressive symptoms and reputation

The first objective in this study was to analyze the relation between bullying and cyberbullying and life satisfaction, feelings of loneliness and depressive symptoms in a sample of Spanish adolescents. In accordance with previous research it is hypothesized that adolescents who are bullied or cyberbullied report a lower level of life satisfaction and a higher degree of depressive symptoms and feelings of loneliness. Also, it is hypothesized that the relation between cyberbullying and life satisfaction, loneliness and depressive symptoms is stronger than the relation between bullying and

those variables, since there are some important different characteristics between the traditional form of bullying and cyberbullying. In traditional bullying, the aggressive behavior usually stops in the school, providing home as a safe environment. Conversely, because of the continuously availability of the internet and cellular phones, cyberbullying can go on for the whole day, even at home (Raskauskas & Stoltz, 2007; in: Kiriakidis & Kavoura, 2010; Tokunaga, 2010), so it is more pervasive in the lives of those who are victimized (Tokunaga, 2010). Thereby, cyberbullies can remain anonymous through the use of temporary e-mail and instant messaging accounts, anonymizers and pseudonyms in social networking sites or chatrooms (Kowalski & Limber, 2007; Patchin & Hinduja, 2010; Strom & Strom, 2005), so the victims are not able to defend themselves, even if they want to (Kiriakidis & Kavoura, 2010). This may lead the victim wondering if each person he or she meets was the offender (Kowalski & Limber, 2007). Moreover, Wang, Nansel and Iannotti (2011) showed that victims of cyberbullying reported higher depression than victims of traditional bullying.

The second objective in this study was to analyze the role of the adolescent's own idea about his or her reputation in the peer group (reputation) in the relation between bullying and cyberbullying and life satisfaction, loneliness and depressive symptoms. It is hypothesized that reputation mediates the relation between (cyber)bullying and a victim's life satisfaction, loneliness and depressive symptoms. In this sense, it is proposed that the relationships between (cyber)bullying and life satisfaction, loneliness and depressive symptoms can be explained by this reputation. So the reputation of the victim would serve to clarify the nature of these relationships. In previous research it has been confirmed that some forms of bullying can damage the reputation of the victim in the peer group and the immediate social network (Pellegrini, 2002). Buelga, Musitu, Murgui & Pons (2008) and Moreno et al. (2009), in turn, found a strong negative relation between perceived reputation and loneliness.

Summarizing, the research questions are (1) 'What is the relation between bullying and cyberbullying and an adolescent's life satisfaction, loneliness and depressive symptoms?' Hypothesized is that adolescents who are bullied or cyberbullied report a lower level of life satisfaction and a higher degree of loneliness and depressive symptoms; (2) 'Is the relation between cyberbullying and life satisfaction, loneliness and depressive symptoms stronger than the relation

between bullying and these variables?’ Expected is that the relations between cyberbullying and life satisfaction, loneliness and depressive symptoms is stronger than the relations between bullying and those variables; (3) ‘Is reputation a mediator in the relation between bullying or cyberbullying and life satisfaction, loneliness and depressive symptoms?’. It is hypothesized that the relation between (cyber)bullying and a victim’s life satisfaction, loneliness and depressive symptoms can be explained by reputation (see Figure 1).

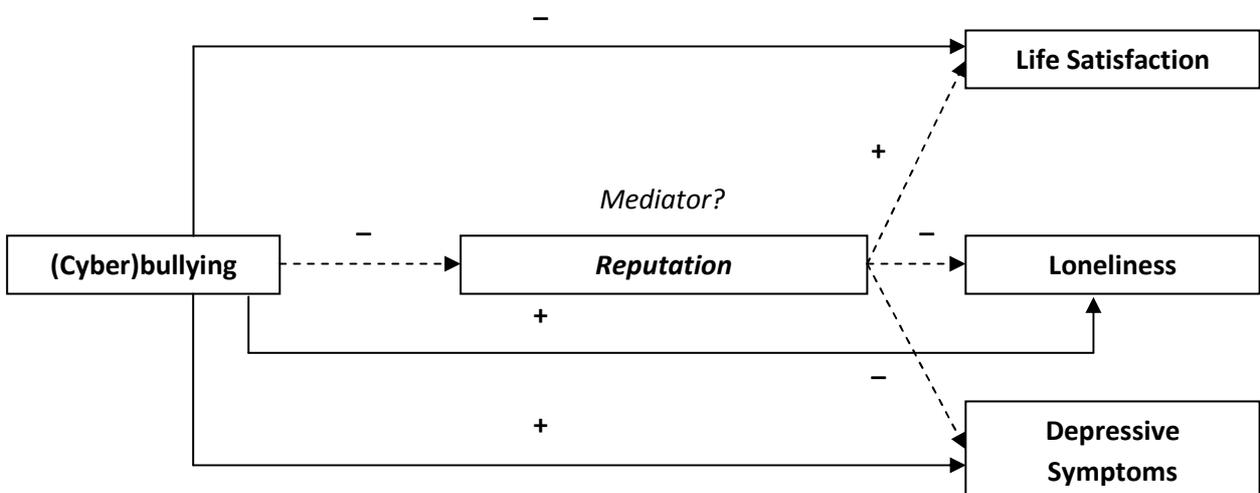


Figure 1. Theoretical model proposed to contrast the relations between (cyber)bullying and life satisfaction, loneliness, depressive symptoms and reputation among adolescents.

Method

Participants

Participants in this investigation were 484 adolescents (267 boys and 217 girls) attending two public schools in the city Valencia (Spain). Of this sample, 30,4% of the participants were in the first grade of Compulsary Secondary Education, 22,7% were in the second grade, 27,3% were in the third grade, and 19,6% of the participants were in the fourth grade. In this sample ages ranged from 11 to 17 years (mean age: 13.87; SD: 1.43).

Procedure

Data for this research were collected as part of a larger study of adjustment problems in adolescence. Letters to ask to participate in the study were sent to the schools. After the schools gave permission, the school staff was informed about the objectives of the study during an approximately two-hour presentation. A letter describing the study and applying for passive consent was sent to the parents of the students. Students filled out the battery of instruments, individually and anonymous, in their classrooms, during a regular class period. Students filled out the questionnaires in the presence of a trained psychologist.

Instruments

Cyberbullying. The scales of victimization through the mobile telephone and through the internet of Buelga, Cava and Musitu (2010) were used. Both scales comprise a response range from 1 to 4 (never, sometimes, very often and always) and the questions are related to perceived bullying in the last year.

The scale of victimization through the mobile telephone consists of 8 behaviors which implicate hostile aggressors (for example: 'I have been taunted with messages or calls'), harassment on the web (for example: 'I have been threatened by making me scared'), humiliation (for example: 'They told lies or false rumours about me'), intimate violence (for example: 'They shared my secrets with others') and social exclusion (for example: 'They phoned me and they didn't answer me'). In this study, the internal consistency (Cronbach's alpha) for this scale is .82.

The scale of victimization through the internet has got the same response range as above and has got the same 8 items, but modified for internet, plus 2 items which are related to aggression which violates intimacy ('They hacked my account') and to aggression of 'phishing' ('They acted like they were me to do or say bad things on internet'). The internal consistency (Cronbach's alpha) for this scale is .81

Bullying. The scale of victimization between equals of Mynard and Joseph (2000), translated into Spanish, and of the questionnaire of social experiences of Crick and Grotpeter (1996), also translated into Spanish, were used. This scale consists of 20 items which describe 20 situations of direct or indirect victimization between equals in the scholastic context (4 items are corresponding with physical bullying, 6 items are corresponding with verbal bullying and 10 items are corresponding with relational bullying). In this questionnaire adolescents need to indicate with which frequency they have experienced every situation during the last scholastic course (for example: 'a peer has insulted me' and 'a peer has accused me of something I didn't do'). The response range consists of 4 responses from 1 (never) to 4 (very often). The internal consistency (Cronbach's alpha) for this scale is .92.

Satisfaction with life. The satisfaction with life scale of Diener, Emmons, Larsen and Griffin (1985), is translated into Spanish by Atienza, Pons, Balaguer and García-Merita (2000). The internal consistency of this instrument in the original version (Cronbach's alpha = 0.84) was confirmed in several investigations (Funk, 2005; Martínez, Buelga, & Cava, 2007). The questionnaire is a 5-item

measure and provides a general index of life satisfaction which refers to the subjective well-being of the adolescent (for example: 'my life is in most aspects how I would like it to be' and 'I am not satisfied with my life'). Level of agreement with the statement is indicated on a 4-point scale (1 = strongly disagree, 4 = strongly agree). The internal consistency (Cronbach's alpha) for this scale in the present study is .72.

Loneliness. The loneliness scale of Russel, Peplau, and Cutrona (1980) is translated into Spanish by Expósito and Moya (1993). This scale consists of 20 items that evaluate the degree of loneliness of the adolescent (for example: 'with what frequency you feel that you need company?') with a 4 point scale (1 = never, 2 = not very often, 3 = often, 4 = always). In this study the internal consistency (Cronbach's alpha) is .89.

Depressive symptoms. The depressive symptoms scale is comprised of the center of epidemiological studies depression scale (CESD) by Radloff (1977). The CESD is a scale which consists of 20 items which evaluates the presence of depressive symptomatology including the following dimensions: depressed mood, positive affect, somatic and retarded activity, and interpersonal distress. It also provides a general measure of depressive mood, which was used in this study (for example: 'I felt depressed' and 'I couldn't sleep well'). In this study 7 items of this scale were used. Responses are rated on a four-point scale, from 1 (never) to 4 (always). The internal consistency (Cronbach's alpha) for this scale in the present study was .80.

Reputation. This scale is a factor of the Reputation Enhancement Scale by Carroll, Baglioni, Houghton and Bramston (1999) and Carroll, Houghton and Baglioni (2000). In this study, we used the subscale of self-perception of reputation that reflects the real reputation, because we considered that it offers the best synthesis of the concept of reputation, according to the authors of the original

questionnaire (Carroll et al., 1999) and Emler and Reicher (1995, 2005). This subscale measures how participants think others view them. The 4-item self-perception of reputation subscale, with a rating response ranging from 1 (*never*) to 4 (*always*), measures the adolescent's perception of their real reputation (for example: 'I am popular in my peer group' and 'I have a good reputation'). In this study the internal consistency (Cronbach's alpha) for this scale is .70.

Data analysis

First a correlation analysis will be performed, to explore the relations between all variables. To determine whether reputation is a mediator in the relation between cyberbullying or bullying and life satisfaction, loneliness and depressive symptoms, the procedure of Baron and Kenny (1986) for testing mediational hypotheses will be applied, using regression analyses. In a last step the Sobel test by Preacher & Leonardelli (2001) will be used to execute the fourth step of Baron and Kenny (1986), in order to test the significance of the mediational effect.

Results

The relationships between all variables

At first, correlation analysis (table 1) has been used to investigate whether there is a relation between bullying or cyberbullying and loneliness, depressive symptoms, life satisfaction and reputation. This analysis shows statistically significant correlations between all variables, with the exception of the correlations between the variables cyberbullying and reputation and reputation and depressive symptoms. There is a significant positive correlation between bullying and loneliness and bullying and depressive symptoms. There is a significant negative correlation between bullying and life satisfaction and bullying and reputation. Cyberbullying is significant positively correlated with loneliness and depressive symptoms and is significant negatively correlated with life satisfaction. This analysis also shows that the relation between bullying and loneliness (.42**) is stronger than the relation between cyberbullying and loneliness (.23**). The relations between bullying and life satisfaction and depressive symptoms and the relations between cyberbullying and life satisfaction and depressive symptoms are not statistically different.

Table 1. Pearson Correlations among all variables (N = 484)

Variables	1.	2.	3.	4.	5.	6.
<i>1. Bullying</i>	-					
<i>2. Cyberbullying</i>	.59**	-				
<i>3. Life Satisfaction</i>	-.23**	-.24**	-			
<i>4. Loneliness</i>	.42**	.23**	-.52**	-		
<i>5. Depressive symptoms</i>	.26**	.24**	-.51**	.48**	-	
<i>6. Reputation</i>	-.12**	.02	.14**	-.35**	-.06	-

** $p < .01$

Mediational analyses

Analyses to test mediational effects were carried out using the Baron and Kenny procedure (1986). Baron and Kenny describe the following four steps required for testing mediational hypotheses (Kenny, 2009):

1) Show that the initial variable is correlated with the mediator. Use the initial variable as a predictor and the mediator as a dependent variable in a regression equation. This step essentially involves treating the mediator as if it were an outcome variable.

2) Show that the initial variable is correlated with the outcome variable. Use the initial variable as a predictor and the outcome variable as a dependent variable in a regression equation. This step establishes that there is an effect that may be mediated.

3) Show that the mediator affects the outcome variable. It is not sufficient just to correlate the mediator with the outcome; the mediator and the outcome may be correlated because they are both caused by the initial variable. Use the outcome variable as a dependent variable and the initial variable and the mediator as predictors in a regression equation. Thus, the initial variable must be controlled in establishing the effect of the mediator on the outcome.

4) To establish that the mediator completely mediates the relationship between the initial and outcome variable, the effect of the initial variable on the outcome variable, controlling for the mediator, should be zero. When the effect of the initial variable on the outcome variable, controlling for the mediator, is not zero, but significant smaller than the effect of the initial variable on the outcome variable (step 2), the mediator partially mediates this relationship. This hypothesis can be tested with the Sobel Test (Preacher & Leonardelli, 2001).

The variables cyberbullying and depressive symptoms have been excluded to the analysis to test mediational effects, because of the absence of significant correlations between cyberbullying and reputation and between reputation and depressive symptoms.

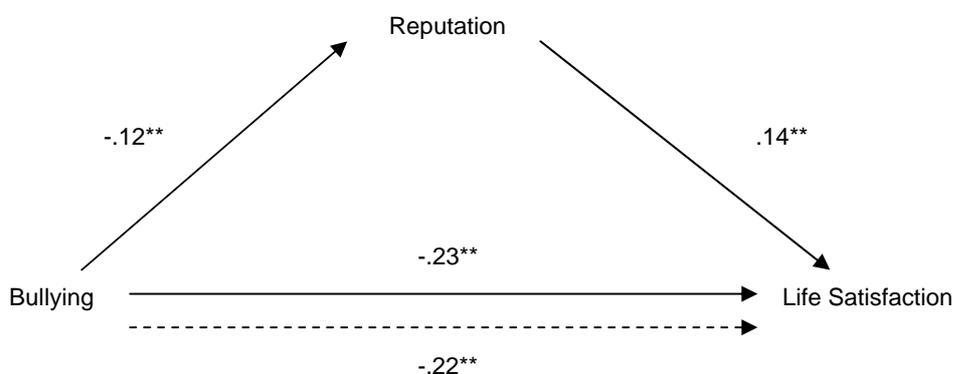
Mediational analysis 1. Bullying and life satisfaction.

Step 1: The initial variable bullying is a significant predictor of the proposed mediator reputation ($\beta = -.12, p < .05$).

Step 2: The initial variable bullying is a significant predictor of the outcome variable life satisfaction ($\beta = -.23, p < .05$).

Step 3: A regression analysis has been used to investigate if the proposed mediator, reputation, affects the outcome variable, life satisfaction, while controlling for the initial variable, bullying. There is a significant positive relation between reputation and life satisfaction, controlling for bullying ($\beta = .12, p < .05$).

Step 4: The same regression analysis has been used to investigate the effect of bullying on life satisfaction, controlling for reputation. This effect is not zero ($\beta = -.22, p < .01$), so reputation is not a complete mediator in the relation between bullying and life satisfaction. To see if partial mediation is indicated, the effect of bullying on life satisfaction, controlling for reputation, has to be significantly smaller than the effect of bullying on life satisfaction without controlling for reputation. This can be tested with the Sobel Test (Preacher & Leonardelli, 2001). According to the Sobel Test reputation is not a significant mediator in the relation between bullying and life satisfaction (Sobel test statistic = -1.88, $p > .05$).



* $p < .05$

** $p < .01$

Figure 2. Model of mediation analysis assessing the relationship of bullying and reputational self perception and life satisfaction. The dotted line represents the association between bullying and life satisfaction, controlling for the proposed mediator reputational self perception.

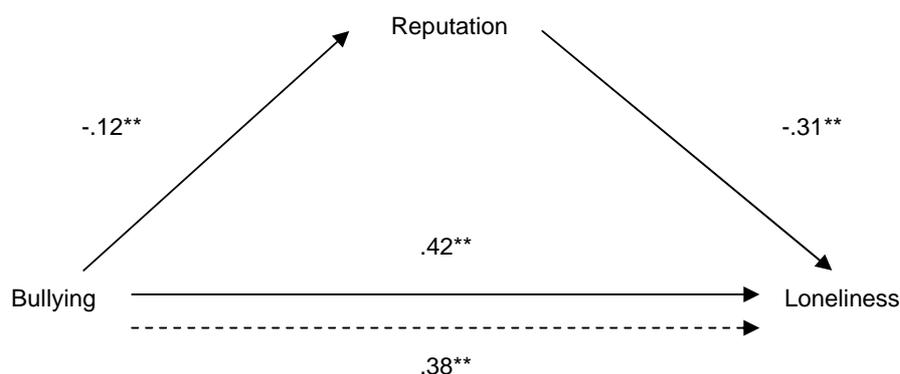
Mediational analysis 2. Bullying and loneliness.

Step 1: The initial variable bullying is a significant predictor of the proposed mediator reputation ($\beta = -.12, p < .05$).

Step 2: The initial variable bullying is a significant predictor of the outcome variable loneliness ($\beta = .42, p < .01$).

Step 3: A regression analysis has been used to investigate if the proposed mediator, reputation, affects the outcome variable, loneliness, while controlling for the initial variable, bullying. There is a significant negative relation between reputation and loneliness, controlling for bullying ($\beta = -.31, p < .01$).

Step 4: The same regression analysis has been used to investigate the effect of bullying on loneliness, controlling for reputation. This relation is not zero ($\beta = .38, p < .01$), so reputation is not a complete mediator in the relation between bullying and loneliness. To see if partial mediation is indicated, the Sobel Test (Preacher & Leonardelli, 2001) has been used. The Sobel test confirms that reputation is a significant partial mediator in the relation between bullying and loneliness (Sobel test statistic = 2.58, $p < .01$).



* $p < .05$

** $p < .01$

Figure 3. Model of mediation analysis assessing the relationship of bullying and reputational self perception and loneliness. The dotted line represents the association between bullying and loneliness, controlling for the proposed mediator reputational self perception.

Discussion

In the present study the relation between bullying and cyberbullying and adolescents' life satisfaction, loneliness and depressive symptoms and the role of reputation in this relation were analyzed.

The first aim of this study was to analyze the relation between bullying and cyberbullying and life satisfaction, loneliness and depressive symptoms. As hypothesized, the results confirm that adolescents who are bullied or cyberbullied report a significant lower level of life satisfaction and a significant higher degree of feelings of loneliness and depressive symptoms. These findings are consistent with previous studies which show that bullying and cyberbullying seriously affect the psychosocial well-being of the victim (Arsenault et al.; 2008, Estévez et al., 2005; Hodges & Perry, 1999; Perren et al., 2010; Storch et al., 2004; VanderBilt & Augustyn, 2010). Also, it was hypothesized that the relation between cyberbullying and life satisfaction, loneliness and depressive symptoms would be stronger than the relation between bullying and these variables, because (1) cyberbullying can be more pervasive since it can go on for the whole day and night, (2) the victim is unable to defend oneself because cyberbullies can remain anonymous, and (3) Wang et al. (2011) showed that victims of cyberbullying reported higher levels of depression than victims of bullying. Nevertheless, this hypothesis has not been confirmed by the results. The relations between bullying or cyberbullying and life satisfaction and depressive symptoms are not statistically different and the relation between bullying and loneliness is even stronger than the relation between cyberbullying and loneliness. An explanation for this result can be that the victim experiences traditional bullying as more 'real' because it happens in the real world, which worsened the feeling of loneliness of the victim more than when the victim has been cyberbullied. Also the absence of a physical bully in cyberbullying could make it less 'real', which, in turn, could make it less severe for the victim.

The second aim of this study was to verify if reputation plays a mediational role in the relation between (cyber)bullying and life satisfaction, loneliness and depressive symptoms. Hypothesized was that the relation between (cyber)bullying and life satisfaction, loneliness and depressive symptoms can be explained by reputation. The obtained results did not confirm this hypothesis, except for a small partial mediational effect for reputation that has been found in the relation between bullying and loneliness. No mediational effects were found in the relation between cyberbullying and life satisfaction, loneliness and depressive symptoms and no mediational effects were found in the relation between bullying and life satisfaction and depressive symptoms. So, the relations between bullying or cyberbullying and life satisfaction, loneliness and depressive symptoms can not be explained by reputation. The small partial mediational effect for reputation in the relation between bullying and loneliness can be explained by the stronger relation between reputation and loneliness (Pearson's correlation: $-.35^{**}$), compared with the relation between reputation and life satisfaction (Pearson's correlation: $.14^{**}$) and the relation between reputation and depressive symptoms (Pearson's correlation: $-.06$, ns). An explanation for this stronger relationship between loneliness and reputation could be that a person views the quantity of friendships as a way to measure his or her reputation in a peer group. When a person has got a high quantity of friends, he or she will probably feel less lonely, and will probably think more people do like him or her more, and therefore will think his or her reputation is 'higher'. An explanation for the absence of a mediational effect in the relation between cyberbullying and the three variables can be that the victim experiences the cyberworld as less 'real', so it affects the victim less than with traditional bullying in the 'real world'.

Finally, several limitations of this study are acknowledged. First, a cross-sectional design was used, which limits the possibility for drawing conclusions about the direction of effects. Further clarification of the found relationships would require a longitudinal study. In this way you cannot distinguish if victims are bullied more because they were reporting higher levels of depression before they were bullied which made them susceptible for being bullied, or that the bullying caused these higher levels of depression. Second, all measures used are self-reports, so response bias might affect the validity. It would be desirable, therefore, to obtain additional data from teachers and parents as

well in future research. Third, according to Perren et al. (2010) 'there is a significant overlap between cyberbullying and bullying such that most young people who are cyberbullied also tend to be bullied by more traditional methods.' Also in this study, some adolescents are bullied and cyberbullied at the same time (Pearson's correlation: .59**). So, there is no clear distinction between the effects of cyberbullying and the effects of bullying.

Despite these limitations, this study can orient future investigations in which the relations analyzed here, are deepened. With this research we hope to contribute to a better understanding of bullying and cyberbullying and so, to the development of effective intervention programs. Moreover, this study demonstrates the strong negative effects of cyberbullying and bullying and hereby it underlines the importance of intervention and prevention programs.

In future research it would be interesting to investigate the effects of cyberbullying and bullying, while controlling for each other. Also, it can be interesting to find out if there are other mediators in the relations between bullying or cyberbullying and life satisfaction, loneliness and depressive symptoms. This can especially be interesting for people working on intervention programs. When a mediator is found, it clarifies the nature between the bullying or cyberbullying and life satisfaction, loneliness and depressive symptoms. When the nature is clear, it is also apparent where to work on to diminish the negative effects of bullying and cyberbullying.

References

- Agatston, P. W., Kowalski, R., & Limber, S. (2007). Students' Perspectives on Cyber Bullying. *Journal of Adolescent Health, 41* (6), S59-S60.
- Arsenault, L, Milne, B. J., Taylor, A., Adams, F., Delgado, K., Cadpi, A., & Moffitt, T. E. (2008). Being Bullied as an Environmentally Mediated Contributing Factor to Children's Internalizing Problems. *Archives of Pediatrics & Adolescent Medicine, 162* (2), 145-150.
- Atienza, F. L., Pons, D., Balaguer, I., & García-Merita, M. (2000). Propiedades psicométricas de la escala de satisfacción con la vida en adolescentes. *Psicothema, 12*, 314-320.
- Baker, O. E., & Tanrikulu, I. (2010). Psychological consequences of cyber bullying experiences among Turkish secondary school children. *Procedia Social and Behavioral Sciences, 2*, 2771-2776.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Bauman, S., & Del Rio, A. (2006). Preservice Teachers' Responses to Bullying Scenarios: Comparing Physical, Verbal and Relational Bullying. *Journal of Educational Psychology, 98*, 219-231.
- Buelga, S., Cava, M. K., & Musitu, G. (2010). Cyberbullying: victimización entre adolescents a través del teléfono móvil y de Internet. *Psicothema, 22* (4), 784-789.
- Buelga, S., Musitu, G., Murgui, S., & Pons, J. (2008). Reputation, Loneliness, Satisfaction with Life and Aggressive Behavior in Adolescence. *The Spanish Journal of Psychology, 11* (1), 192-200.
- Carbone-Lopez, K., Esbensen, F., & Brick, B. T. (2010). Correlates and Consequences of Peer Victimization: Gender Differences in Direct and Indirect Forms of Bullying. *Youth Violence and Juvenile Justice, 8* (4), 332-350.
- Carroll, A., Baglioni, A.J., Houghton, S., & Bramston, P. (1999). At-risk and not at-risk primary school children: An examination of goal orientations and social reputations. *British Journal of Educational Psychology, 69*, 377-392.
- Carroll, A., Green, S., Houghton, S., & Wood, R. (2003). Reputation Enhancement and Involvement in Delinquency Among High School Students. *International Journal of Disability, 50* (3), 253-273.
- Carroll, A., Hattie, J., Durkin, K., & Houghton, S. (2001). Goal-setting and reputation enhancement: Behavioural choices among delinquent, at-risk and not at-risk adolescents. *Legal and Criminological Psychology, 6*, 165-184.

- Carroll, A., Houghton, S., & Baglioni, J.R. (2000). Goals and reputations amongst young children. The validation of the importance of goals and reputation enhancement scales. *Social Psychology International*, 21, 115-135.
- Cassidy, W., Jackson, M., & Brown, K. N. (2009). Sticks and Stones Can Break My Bones, But How Can Pixels Hurt Me? *School Psychology International*, 30 (4), 383-402.
- Cava, M.J., Musitu, G., & Murgui, S. (2007). Individual and social risk factors related to overt victimization in a sample of Spanish adolescents. *Psychological Reports*, 101, 275-290.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development*, 66, 710-722.
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology*, 8, 367-380.
- Diener, E., Emmons, R., Larsen, R.J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Dilmaç, B. (2009). Psychological needs as a predictor of cyberbullying: A Preliminary report on college students. *Kurum ve Uygulamada Egitim Bilimleri*, 9 (3), 1307-1325.
- Due, P., Holstein, B. E., Lynch, J., Diderichsen, F., Gabhain, S. N., Scheidt, P., Currie, C., & The Health Behaviour in School-Aged Children Bullying Working Group (2005). Bullying and symptoms among school-aged children: international comparative cross sectional study in 28 countries. *European Journal of Public Health*, 15, 128-132.
- Emler, N., & Reicher, S. (1995). *Adolescence and Delinquency*. Oxford: Blackwell.
- Emler, N., & Reicher, S. (2005). Delinquency: Cause or consequence of social exclusion? In: Abrams, D., Marques, J., & Hogg, M. (Eds.), *The social psychology of inclusion and exclusion* (pp. 211-241). Philadelphia, PA: Psychology Press.
- Eslea, M., Menesini, E., Morita, Y., O'Moore, M., Mora-Merchan, J. A., Pereira, B., & Smith, P. K. (2003). Friendship and loneliness among bullies and victims: Data from seven countries. *Aggressive Behavior*, 30, 71-83.
- Espelage, D. L., & Swearer, S. M. (2003). Research on school bullying and victimization: What have we learned and where do we go from here? *School Psychology Review*, 32, 365-383.
- Estévez, E., Musitu, G. y Herrero, J. (2005). The influence of violent behavior and victimización at school on psychological distress: the role of parents and teachers. *Adolescence*, 40 (157), 183-196.

- Expósito, F., & Moya, M. (1993). Validación de la UCLA loneliness scale en una muestra española. In: Loscertales, F., & Marín, M. (Eds.), *Dimensiones psicosociales de la educación y de la comunicación* (pp. 355-364). Sevilla: Eudema.
- Funk, B.A. (2005). Validation of a Brief Students' Life Satisfaction Scale with adolescents. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 65, 12-B, 6650.
- Giovazolias, T., Kourkoutas, E., Mitsopoulou, E., & Georgiadi, M. (2010). The relationship between perceived school climate and the prevalence of bullying behavior in Greek schools: implications for preventive inclusive strategies. *Procedia Social and Behavioral Sciences*, 5, 2208-2215.
- Hinduja, S., & Patchin, J. W. (2010). Bullying, Cyberbullying, and Suicide. *Archives of Suicide Research*, 14, 206-221.
- Hodges, E. V. E., & Perry, D. G. (1999). Personal and Interpersonal Antecedents and Consequences of Victimization by Peers. *Journal of Personality and Social Psychology*, 76 (4), 677-685.
- Hoff, D. L., & Mitchell, S. N. (2009). Cyberbullying: causes, effects, and remedies. *Journal of Educational Administration*, 47 (5), 652-665.
- Hopkins, N., & Emler, N. (1990). Social Network Participation and Problem Behavior in Adolescence. In Hurrelman, K., & Lösel, F., *Health Hazards in Adolescence* (pp. 385-407). Berlin; New York : de Gruyter.
- Kenny, D. A. (2009). *Mediation*. University of Connecticut. <http://davidakenny.net/cm/mediate.htm>.
- Kiriakidis, S. P., & Kavoura, A. (2010). Cyberbullying. A Review of the Literature on Harassment Through the Internet and Other Electronic Means. *Family Community Health*, 33 (2), 82-93.
- Kristensen, S. M., & Smith, P. K. (2003). The use of coping strategies by Danish children classed as bullies, victims, bully/victims, and not involved, in response to different (hypothetical) types of bullying. *Scandinavian Journal of Psychology*, 44, 479-488.
- Kowalski, R., & Limber, S. P. (2007). Electronic Bullying Among Middle School Students. *Journal of Adolescent Health*, 41, S22-S30.
- Kumpulainen, K., Rasanen, E., & Puura, K. (2001). Psychiatric Disorders and the Use of Mental Health Services Among Children Involved in Bullying. *Aggressive Behavior*, 27, 102-110.
- Martínez, M., Buelga, S., & Cava, M.J. (2007). La satisfacción con la vida en la adolescencia y su relación con la autoestima y el ajuste escolar. *Anuario de Psicología*, 38, 293-303.

- Mesch, G. S. (2009). Parental Mediation, Online Activities, and Cyberbullying. *CyberPsychology & Behavior, 12* (4), 387-393.
- Moreno, D., Estévez, E., Murgui, S., & Musitu, G. (2009). Reputación social y violencia relacional en adolescentes: el rol de la soledad, la autoestima y la satisfacción vital. *Psicothema, 21* (4), 537-542.
- Mynard, H., & Joseph, S. (2000). Development of the multidimensional peer-victimization scale. *Aggressive Behavior, 6* (2), 169-178.
- O'Moore, M., & Kirkham, C. (2001). Self-esteem and its relationship to bullying behavior. *Aggressive Behavior, 27*, 269-283.
- Patchin, J. W., & Hinduja, S. (2010). Cyberbullying and Self-Esteem. *Journal of School Health, 80* (12), 614-621.
- Pellegrini, A. D. (2002). Bullying, Victimization, and Sexual Harassment During the Transition to Middle School. *Educational Psychologist, 37* (3), 151-163.
- Perren, S., Dooley, J., Shaw, T., & Cross, D. (2010). Bullying in school and cyberspace: Associations with depressive symptoms in Swiss and Australian adolescents. *Child and Adolescent Psychiatry and Mental Health, 4* (28), 1-10.
- Preacher, K.J. & Leonardelli, G.J. (2001). Calculation for the Sobel Test. An interactive calculation tool for mediation tests. <http://www.people.ku.edu/~preacher/sobel/sobel.htm>.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Raskauskas, J. (2010). Multiple peer victimization among elementary school student: relations with social-emotional problems. *Social Psychology of Education, 13*, 523-539.
- Raskauskas, J. (2010). Text-Bullying: Associations With Traditional Bullying and Depression Among New Zealand Adolescents. *Journal of School Violence, 9*, 74-97.
- Roth, D. A., Coles, M. E., & Heimberg, R. G. (2002). The relationship between memories for childhood teasing and anxiety and depression in adulthood. *Anxiety Disorders, 16*, 149-164.
- Russell, D., Peplau, L.A., & Cutrona, C.E. (1980). The revised UCLA loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology, 39*, 472-480.
- Schnohr, C., & Niclasen, B. V. (2006). Bullying among Greenlandic schoolchildren: development since 1994 and relations to health behaviour. *International journal of circumpolar health, 65* (4), 305-312.

- Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*, 147-154.
- Smith R.G., & Gross A.M. (2006). Bullying: Prevalence and the Effect of Age and Gender. *Child & Family Behavior Therapy, 28*, 13-37
- Smith, P. K., Cowie, H., Olafsson, R. F., Liefoghe, A. P. D., Almeida, A., Araki, H., Del Barrio, C., Costabile, A., Dekleya, B., Houndoumadi, A., Kim, K., Olafsson, R. P., Ortega, R., Pain, J., Pateraki, L., Schafer, M., Singer, M., Smorti, A., Toda, Y., Tomasson, H., & Wenxin, Z. (2002). Definitions of bullying: A comparison of terms used, and age and gender differences, in a fourteen-country international comparison. *Child development, 73*, 1119-1133.
- Storch, E. A., Roth, D. A., Coles, M. E., Heimberg, R. G., Bravata, E. A., & Moser, J. (2004). The measurement and impact of childhood teasing in a sample of young adults. *Journal of Anxiety Disorders, 18 (5)*, 681-694.
- Strom, P. S., & Strom, R. D. (2005). Cyberbullying by Adolescents: A Preliminary Assessment. *The Educational Forum, 70*, 21-36.
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*, 277-287.
- Undheim, A. M., & Sund, A. M. (2010). Prevalence of bullying and aggressive behavior and their relationship to mental health problems among 12- to 15-year-old Norwegian adolescents. *European Child and Adolescent Psychiatry, 19*, 803-811.
- Vanderbilt, D., & Augustyn, M. (2010). The effects of bullying. *Paediatrics and Child Health, 20 (7)*, 315-320.
- Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School Bullying Among Adolescents in the United States: Physical, Verbal, Relational and Cyber. *Journal of Adolescent Health, 45*, 368-375.
- Wang, J., Nansel, T. R., & Iannotti, R. J. (2011). Cyber and Traditional Bullying: Differential Association With Depression. *Journal of Adolescent Health, 48 (4)*, 415-417.
- Wolke, D., Woods, S., Bloomfield, L., & Karstadt, L. (2000). The Association between Direct and Relational Bullying and Behaviour Problems among Primary School Children. *Journal of Child Psychology and Psychiatry, 41 (8)*, 989-1002.