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Emotional, psychophysiological and behavioral responses elicited by the exposition to cyberbullying situations: Two experimental studies

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ABSTRACT

Two experimental studies investigated whether the exposure to cyberbullying situations produces in bullied youth, and in young people in general, higher levels of stress, negative emotions, and attention levels, in comparison to other peer interactions, including bullying. In both studies, participants' physiological activation (Study 1 and 2) and behavioral data (Study 2) were recorded while watching four 1-minute videos representing cyberbullying, face-to-face bullying, prosocial, and neutral interactions. Self-report questionnaires assessed participants' emotional responses to the videos, and victimization. Sixty-one adolescents (65.7% girls) participated in Study 1; 35 young adults (60% girls) participated in Study 2. Results indicate that cyberbullying causes higher stress and negative emotions than prosocial and neutral peer interactions, but not than bullying. Cyberbullying also elicited higher levels of stress and negative emotions in victims than non-victims, but only for adolescents.

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Las respuestas emocionales, psicofisiológicas y comportamentales producidas ante la exposición a situaciones de cyberbullying: dos estudios experimentales

RESUMEN

Mediante dos estudios experimentales se investiga si la exposición a situaciones de cyberbullying produce en los jóvenes acosados y en los jóvenes en general mayor nivel de estrés, de emociones negativas y de atención comparados con otras interacciones entre compañeros, incluyendo el bullying. En ambos estudios se registró la activación psicofisiológica de los participantes (estudios 1 y 2) y se recogieron datos de comportamiento (estudio 2) mientras se veían 4 vídeos de 1 minuto de duración que contenían cyberbullying, bullying cara a cara e interacciones prosociales y neutras. Mediante cuestionarios de autoinforme se evaluaron las respuestas emocionales de los participantes a los vídeos así como la victimización. Sesenta y un adolescentes (el 65.7% chicas) participaron en el estudio 1 y 35 adultos jóvenes (el 60% chicas) en el estudio 2. Los resultados indican que el cyberbullying produce mayor estrés y emociones negativas que las interacciones prosociales y neutras entre compañeros, pero no que el bullying. El cyberbullying también produjo mayor nivel de estrés y emociones negativas en víctimas que en las personas que no lo eran, aunque solo para los adolescentes.

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The use of Information and Communication Technologies (ICT) is nowadays a daily experience for adults and adolescents (Antonietti, Colombo, & Lozotsev, 2008). Such technologies allow to improve work and learning performances (e.g., Colombo, Antonietti, Sala, & Caravita, 2013), and to favor contacts and socialization among people. However, this widespread use of ICT is

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also linked to a higher exposure to violent and aggressive acts, such as cyberbullying. Cyberbullying is any harming behavior that is performed through electronic or digital media (Patchin & Hinduja, 2006). Because of the specific features of cyber-aggression, in particular the possible anonymity of the aggressor and the difficulty or impossibility for the victims to escape the attacks which are perpetrated by electronic devices, cyberbullying has been suggested to cause high stress, possibly even higher than traditional bullying, which stops out of school (Smith et al., 2008). The stress and the negative emotional responses to cyberbullying may be high not only for the bullied youth, but also for the witnesses who can identify with the victim and perceive that they can become the next victim, with small possibilities to avoid or to stop the cyber attacks. In line with this background, this research project is aimed at exploring whether the exposure to cyberbullying episodes causes higher levels of distress and emotional reactions, in comparison to the exposure to other types of peer interactions, including bullying, to youth who witness and to the victims of bullying, by means of two experimental studies.

Bullying and Cyberbullying

Bullying consists of intentional and repeated aggressive behaviors against peers, characterized by an imbalance of power between the aggressor(s) and the victim(s) (Olweus, 1991). The imbalance in the power in favor of the bully it is what mostly distinguishes bullying, because the victim cannot contrast adequately the bully's attacks (Smith & Sharp, 1994). Bullying can be perpetrated by means of different forms of aggressive behavior: direct aggression, physical or verbal, or indirect and relational.

With the diffusion of the ICT, a new form of bullying and harassment, realized by means of electronic devices, emerged, i.e., cyberbullying. In cyberbullying the aggression can be performed by text message, email, phone call, picture/videoclip, and use of social network tools. Likewise, in the traditional bullying, attacks can be direct, such as sending offensive messages, or indirect, such as spreading embarrassing videos or pictures in internet. As in traditional bullying, the aggressors intentionally harm the victim with repeated actions. Furthermore, the possibility allowed by ICTs of acting cyber-aggression easily and anonymously, often with the support of other web-users, recreates the imbalance of power between the aggressor(s) and the victim(s). Cyberbullying also presents specific features (Nocentini et al., 2010) that may make the attacks even more harmful for the victims in comparison to traditional bullying. Cyberbullying endures over time, because offensive content posted in the web cannot be erased easily, and kids have fewer possibilities to escape from the aggression (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Furthermore, anonymity allowed to the aggressors by ICTs (Nocentini et al., 2010) makes defending from the attacks even harder for the victims. In addiction, larger audience of bystanders can also be reached (Nocentini et al., 2010) and often peers who witness the cyberbullying action take the side of the bully, by showing to approve the aggression. It happens because, when using ICT, direct contact and face-to-face communication with the victims are lacking, so that the aggressors and the bystanders are less aware of the seriousness of their behavior and of the suffering inflicted to the victim.

Regardless of these specificities of cyberbullying, many victims of cyberbullying are also victims of traditional bullying (Smith et al., 2008), and young people who experienced traditional victimization within the previous 6 months are 2.5 times more likely to be cybervictimized too (Hinduja & Patchin, 2008). These data support the hypothesis that being victimized in the cyberspace is only another way for bullied kids to suffer peer victimization.

Emotional Consequences of Cyberbullying and Bullying

Victims of traditional bullying have been found to be at risk of poor health symptoms, internalizing problems, and suicidality (e.g., Kim & Leventhal, 2008; Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Among adverse consequences of being victimized there is also experiencing negative emotional reactions (e.g., Rodríguez-Hidalgo, Ortega, & Monks, 2015), linked to the feeling of being defenseless and of having a scarce control of the situation (Caravita, 2007; Graham & Juvonen, 2001). This may affect heart rate variability in witnesses (Barhight, Hubbard, & Hyde, 2013), and the levels of distress, depression and worries for at least some victims of traditional bullying (Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009).

Focusing on cyberbulling, Fenaughty and Harré (2013) found that approximately 50% of cybervictims consider this experience upsetting. Ortega et al. (2009) showed that there are two clusters of cybervictims: youth, mainly girls, who tend not to be bothered by the situation, and youth, mainly boys, who experience high levels of different negative emotions. In a study involving 1,353 adolescents, being cyberbullied had a greater negative emotional impact especially for victims who were both bullied out of and within the cyberspace, in comparison to peers who were only cybervictimized (Gualdo, Hunter, Durkin, Arnaiz, & Maquilón 2015). Therefore, bullied youth may feel the cyberbullying experience particularly upsetting. However, to our knowledge no studies have investigated whether the exposure to cyberbullying can actually cause in bullied youth, in comparison to peers, higher levels of distress, assessed by means of not only self-reports of negative emotions but also by means of more precise indices (i.e., psycho-physiological responses and attentional behaviors), than the exposure to traditional bullying and other types of peer-interactions. Furthermore, we could not find studies testing the levels of distress and negative emotions elicited by the exposure to cyberbullying as compared to traditional bullying and other forms of peer-interactions in the witnesses, regardless of being bullied or not.

The Present Study

Two experimental studies have been realized to examine emotional (self-report), physiological (*biofeedback* equipment), and behavioral (*eye-tracker* equipment) responses to the exposure to situations of cyberbullying, bullying, prosocial, and neutral peer interactions. The situations have been represented via multimedia video-stimuli.

Study 1 involved 61 adolescents (11-16 years), while study 2 was a retrospective study involving 35 young adults (20-26 years). First objective of the studies was exploring whether the vision of cyberbullying situations elicits different levels of emotional and physiological responses in the victims of bullying at school as compared to non-victims. Cyberbullying situations were compared to bullying situations, prosocial, and neutral peer interactions (all showed by means of videos). The first hypothesis was that watching cyberbullying elicits in the victims of bullying higher levels of distress and negative emotions than watching bullying happening, because of the features of cyberbullying, i.e., possible anonymity of the bullies and permanency of the attacks in the cyber-space, which get difficult to escape the cyber-aggression for the victim. The vision of both cyberbullying and bullying was also expected to elicit different levels of physiological responses and negative emotions in the victims than the vision of prosocial or neutral peer interactions. The second hypothesis was that the vision of both cyberbullying and bullying elicits higher levels of stress (as measured by variation in physiological indexes) and negative emotions in bullying victims than peers.