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**Reference:**

Vranjes Ivana, Erreygers Sara, Vandebosch Heidi, Baillien Elfi, De Witte Hans.- Patterns of cybervictimization and emotion regulation in adolescents and adults  
Aggressive behavior: a multidisciplinary journal devoted to the experimental and observational analysis of conflict in humans and animals / International Society for  
Research on Agression - ISSN 0096-140X - 44:6(2018), p. 647-657  
Full text (Publisher's DOI): <https://doi.org/10.1002/AB.21790>  
To cite this reference: <https://hdl.handle.net/10067/1547110151162165141>

## Patterns of Cybervictimization and Emotion Regulation in Adolescents and Adults

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### Abstract

Research on cyberbullying has boomed in the past two decades. Findings from studies among adolescents suggest that they can be classified into distinct groups based on their cyberbullying experience, and that cyberbullying seems to be related to poor emotion regulation. So far, only a few studies have examined cyberbullying among adult workers and it is unclear whether cyberbullying develops similarly in that population. Therefore, in this study cyberbullying victimization was assessed in adolescents and adult workers simultaneously to address three aims: (1) to explore which groups can be distinguished based on their cyberbullying experience, (2) to analyze the associations of group membership with the way people regulate their emotions, and (3) to examine whether the results are comparable in adolescents and adults. Latent class analysis was used to analyze data from 1,426 employees and 1,715 adolescents in the first year of secondary education (12-13 years old). In each population, three profiles differing in their patterns of cybervictimization were identified: no cybervictimization (80%), work-related cybervictimization (18%), and pervasive cybervictimization (3%) for adults, and no cybervictimization (68%), similar-to-offline cybervictimization (27%), and pervasive cybervictimization (4%) for adolescents. Furthermore, these profiles differed in their use of emotion regulation strategies, with pervasive cyber-victims suppressing their emotions significantly more than other groups. Future research is needed to clarify the role of emotion regulation in cyberbullying as an antecedent or consequence of victimization.

**Keywords:** cyberbullying, emotion regulation, victimization, latent class analysis,

## Introduction

The past decades have been characterized by a digital revolution. This has led to information communication technologies (ICT) becoming an inherent part of people's daily lives. The increasing shift of our daily reality from the physical to the online context has led to a transformation of interpersonal phenomena as well. In that respect, cyberbullying – defined as “an aggressive, intentional act carried out by a group or individual, using mobile phones or the internet, repeatedly and over time against a victim who cannot easily defend him or herself” (Smith et al., 2008) – has been gaining attention. However, while research into adolescent cyberbullying has boomed since the beginning of the 21st century, efforts to understand adult cyberbullying have been less pronounced (Zych, Ortega-Ruiz, & Del Rey, 2015). Yet, evidence indicates that cyberbullying is a prevalent phenomenon in working adults as well (D’Cruz & Noronha, 2013; Forssell, 2016; Privitera & Campbell, 2009). Moreover, there is a dearth of research examining cyberbullying in both populations simultaneously, and it is unclear whether cyberbullying victimization is related to similar factors in children and adults.

Adolescents and adults differ markedly, not only in age but also in life experience, exposure to ICT, context, etc. Therefore, the first question of this study is whether cyberbullying victimization manifests itself similarly in these two populations or whether the nature of cyberbullying changes throughout the lifespan. This is relevant, as it can help us understand whether lines can be drawn between different age groups in this phenomenon or whether cyberbullying fundamentally changes over the lifecourse. Because of this, we investigated whether different groups of adolescents and adults can be distinguished based on their exposure to cyberbullying acts. The second question pertains to whether similar factors relate to adolescent and adult cyberbullying. If similar factors are found to be associated with cyberbullying in

different age groups, this would lend particularly strong support for their importance in the cyberbullying process. While many different variables have been associated with cyberbullying victimization in adolescents, not all of these variables are expected to be equally relevant in adulthood. In this study we focus on the association between cyberbullying and emotion regulation. Emotion regulation has previously been linked with cyberbullying in the school context (Hemphill & Heerde, 2014; Hemphill, Tollit, Kotevski, & Heerde, 2015). Moreover, emotion regulation seems to play a uniquely important role in cyberbullying. Namely, evidence indicates that adolescents experiencing social and emotional difficulties are more likely to be cyberbullied and traditionally bullied, than traditionally bullied only (Cross, Lester, & Barnes, 2015). Furthermore, not being able to use own emotions in social interactions is a predictor of cyberbullying but not traditional bullying (Baroncelli & Ciucci, 2014). Emotion regulation is also a factor that remains important for individuals' social functioning irrespective of their age or context (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Diamond & Aspinwall, 2003). This is why in this study we additionally investigated whether emotion regulation strategies are associated with different cyberbullying victimization patterns in adolescents and adults.

### **Cyberbullying Victimization: Differences in Experience**

The majority of cyberbullying research has focused on children and adolescents, because many of them are confronted with this type of behavior during their school years (e.g., Tsitsika et al., 2015). In cyberbullying studies, individuals are often either considered to be victimized or not, based on their response to one or more questions on cyberbullying victimization experiences (Thomas, Connor, & Scott, 2015). However, the group of victims is highly heterogeneous, with victimization experiences ranging in type, frequency, and severity (Smokowski, Evans, & Cotter, 2014; Staude-Müller, Hansen, & Voss, 2012).

Identifying subgroups in cyberbullying victimization can be useful for understanding individual differences in adjustment and well-being (e.g., Schwartz, 2000). The fact that negative experiences can differ so profoundly is significant as it influences the prevention and remediation strategies applied. As such, identifying subgroups may help in developing tailored interventions: Interventions that are adjusted to the specific cyberbullying features individuals experience may be more effective in preventing bullying than standard interventions (Nocentini, Zambuto, & Menesini, 2015; Ryan & Lauver, 2002). It is therefore important to examine whether individuals who experience cyberbullying can be classified according to their victimization patterns.

To analyze whether subgroups of individuals can be distinguished based on similar patterns of cyberbullying experiences, person-centered approaches such as latent-class analysis can be used. In previous attempts to distinguish different groups of adolescents based on their involvement in cyberbullying, the relation between online victimization and perpetration has been examined (Festl, Vogelgesang, Scharkow, & Quandt, 2017; Schultze-Krumbholz et al., 2015), as well as the stability of cyberbullying victimization over time (Gámez-Guadix, Gini, & Calvete, 2015), and the relation between online and offline bullying behavior (Pabian & Vandebosch, 2016; Wang, Iannotti, & Luk, 2012; Wang, Iannotti, Luk, & Nansel, 2010). However, subgroups based (solely) on cyberbullying victimization experiences have not been examined yet.

Recently, cyberbullying researchers have begun to examine cyberbullying in other populations, and a few studies have indicated that cyberbullying also occurs in the workplace (e.g., Coyne et al., 2016; Gardner et al., 2016). Workplace cyberbullying has been defined as “all negative behavior stemming from the work context and occurring through the use of ICTs, which

is either (a) carried out repeatedly and over a period of time or (b) conducted at least once but forms an intrusion into someone's private life, (potentially) exposing it to a wide online audience. This behavior leaves the target feeling helpless and unable to defend" (Vranjes, Baillien, Vandebosch, Erreygers, & De Witte, 2017, p. 326). Until now, no attempts have been made to examine whether subgroups of individuals can be distinguished based on their involvement in cyberbullying behavior at work. However, in a study among Belgian employees (Notelaers, Einarsen, De Witte, & Vermunt, 2006), six latent classes of traditionally bullied employees were identified: "not bullied," "limited work criticism," "limited negative encounters," "sometimes bullied," "work related bullied," and "victims". Similar groups were also found in a later study among Spanish employees by Leon-Perez, Notelaers, Arenas, Munduate, and Medina (2014).

Research has shown that the culture of the organization in which individuals are embedded (school or workplace) has an important influence on bullying behavior: Bullying is more prevalent in non-democratic and authoritarian organizations with a rigid hierarchy (Leymann, 1996; Roland & Galloway, 2002), and the presence or absence of explicit rules against bullying, implicit rewards for bullying (e.g., elevated status), and organizational responses to bullying also play an important role (Monks et al., 2009). We might expect that adults experience more indirect and subtle, less obvious forms of cyberbullying, as there may be severe consequences to being identified as a bully in the workplace, such as being fired (Monks et al., 2009; Smith, Singer, Hoel, & Cooper, 2003). Additionally, we might expect less "traceable" forms of cyberbullying, such as text-or image-based cyberbullying, as these could be used as evidence against the perpetrator in disciplinary actions (Ariss, 2002).

## Cyberbullying and Emotion Regulation

Emotions have an important function as they order the behavior of people and help them position themselves in society (Cole, Martin, & Dennis, 2004). Additionally, experienced and expressed emotions are also a signal to others on how to behave (Van Kleef, 2009). The way emotions are managed can therefore be of crucial importance in social interactions. The strategies individuals use to regulate their internal emotional arousal are defined as emotion regulation (Gross & Thompson, 2007).

According to the process model of emotion regulation, two broad categories of emotion regulation can be distinguished: antecedent-focused and response-focused (Gross, 1998a, 1998b). Antecedent-focused strategies alter the *experience* of emotions resulting from specific stimuli. Response focused strategies alter the emotional *expression* of the experienced emotions. In that regard, reappraisal (i.e., reinterpretation of the meaning of an emotion-eliciting event) and suppression (i.e., inhibition of emotion expression) are said to be the two most commonly used antecedent-focused and response-focused emotion regulation strategies respectively (John & Gross, 2004).

Difficulty managing and regulating emotional expression has been shown to be an important predictor of problematic peer relationships in children (Pakaslahti, 2000). Adolescent victims of traditional bullying display higher scores on emotion dysregulation than non-victims (Garner & Hinton, 2010; Schwartz, 2000; Spence, De Young, Toon, & Bond, 2009). Furthermore, when victims of bullying fail to adaptively regulate their emotions, this can provoke continuation of victimization (Cowie & Berdondini, 2002; Spence et al., 2009). With regards to cyberbullying, adolescent cyberbullying perpetrators seem to be less able to regulate and use their emotions than non-involved adolescents and traditional bullies (Baroncelli &

Ciucci, 2014). They also make more use of negative emotion regulation strategies, such as self- or other-blaming, ruminating, and catastrophizing, to cope with anger (den Hamer & Konijn, 2016). Victims of cyberbullying also seem to show deficits in emotion regulation: Adolescents who are less skilled in controlling their emotions are at higher risk of cybervictimization (Hemphill & Heerde, 2014; Hemphill et al., 2015) and being victimized online heightens later rumination (Feinstein, Bhatia, & Davila, 2014).

In adults, empirical evidence on the factors related to cyberbullying is scarce. However, recently, a theoretical model has been developed putting emotions and emotions regulation strategies forward as crucial factors in the cyberbullying process in the workplace (Vranjes et al., 2017). Emotion regulation difficulties may either be a risk factor for cyberbullying or a response to being cyberbullied, or both. Given that individuals who suppress their emotions tend to come across as less authentic and are therefore less likely to get social support (English & John, 2013), it could be that these individuals are easy victims for online aggression. However, it could also be that suppression is a strategy used by cyberbullying victims to cope with their negative emotions. In that regard, it has already been demonstrated that victims of cyberbullying often apply emotion-focused coping strategies (Raskauskas & Huynh, 2015) and that responses to cyberbullying are generally passive (Hamm et al., 2015).

In this paper, we also focus on the emotion regulation strategies of reappraisal and suppression, given that they are the most widely used regulatory strategies with a clear link to different individual outcomes (John & Gross, 2004). We know that these strategies are applied by both adolescents and adults, although to a different extent – adolescents tend to use somewhat less reappraisal (Garnefski, Legerstee, Kraaij, van den Kommer, & Teerds, 2002) and more suppression (Gullone, Hughes, King, & Tonge, 2010) than older age groups. However, there is

an abundance of evidence that in both adolescents and adults, reappraisal is linked to beneficial outcomes (Carthy, Horesh, Apter, Edge, & Gross, 2010; Garnefski, Koopman, Kraaij, & ten Cate, 2009; J. J. Gross & John, 2003; Richards & Gross, 2000), such as higher well-being and less anxiety, while suppression is linked to harmful outcomes, such as more depression, anxiety and aggressive behavior, and less positive mood (Betts, Gullone, & Allen, 2009; Butler et al., 2003; J. J. Gross, 2002; Jaffe, Gullone, & Hughes, 2010; Zeman, Shipman, & Suveg, 2002). We therefore expect reappraisal to be associated with less exposure to cyberbullying, and suppression with more exposure to cyberbullying, in both adolescents and adults.

### **This Study**

In this study, comparing an adolescent and an adult sample, we aim to examine whether different subgroups of individuals can be identified based on their cyberbullying victimization experiences. Because the two populations differ markedly, it is interesting to explore whether comparable subgroups exist among adolescents and adults. Additionally, we aim to investigate the association between reappraisal and suppression emotion regulation strategies and group membership based on cyberbullying victimization experiences in both populations.

### **Method**

The data were collected in two samples: (1) an adolescent sample of high school students and (2) an adult sample of employees. The methods used in each sample were comparable but with some important adaptations to the specific population and context. Below we describe the methods for each sample separately. Descriptive statistics are displayed in Table 1.

### **Participants**

**Adolescents.** The adolescent participants were 1,715 students (54% female) in the first year of secondary education (equivalent to US grade 7) from 13 randomly selected schools from

the province of Antwerp in Belgium. 89% of the students were in the general education program and 11% in vocational education. They were on average 13.6 years old (range 10-15).

**Adults.** The adult participants were 1,426 employees (46% male), who were recruited from different Flemish organizations in Belgium. The majority was highly educated: 67% of the participants had more than a high school degree. 92% of them worked in the public sector. Their mean age was 42 years (range 18-69).

## Measures

### Adolescents.

**Cyberbullying victimization.** We used the 11-item European Cyberbullying Intervention Project Questionnaire (Brighi et al., 2012; Del Rey et al., 2015; Schultze-Krumbholz et al., 2015) to assess the adolescents' cyberbullying victimization experiences. For each of 11 statements about cyberbullying (e.g., "Someone said mean things about you online"), the participants were asked whether they had experienced these forms of behavior in the past six months, on a 5-point Likert-type scale ranging from *Never* to *Every day*. For the purpose of this study, the items were dichotomized such that all *Never*-answers were coded as 0 and all others as 1 (indicating victimization). Dichotomizing ordinal variables is a common practice in latent class analysis to ensure interpretability of results (Collins & Lanza, 2010). With a Cronbach's alpha of .79, this scale's reliability was good.

**Emotion regulation.** The Affective Style Questionnaire (Hofmann & Kashdan, 2010) was used to measure adolescents' tendencies to habitually use two types of emotion regulation strategies: *Adjusting* (five items; e.g., "I can avoid getting upset by taking a different perspective on things") and *Concealing* (eight items; e.g., "I am good at hiding my feelings"). *Adjusting* refers to being able to readjust or balance emotions in response to contextual demands, and

encompasses the habitual use of adaptive strategies such as reappraisal. *Concealing* refers to habitually suppressing and concealing emotions when they arise. The original scale has a third subscale, *Tolerating*, which was not used in this study because of its limited comparability to the adult emotion regulation subscales. On a 5-point Likert-type scale from 1 (*Not at all like me*) to 5 (*Totally like me*) participants reported how they usually behave. The subscales were reliable, as indicated by Cronbach's alpha values of .74 for *Concealing* and .77 for *Adjusting*.

### **Adults.**

***Cyberbullying victimization.*** Adults' cyberbullying victimization experiences were assessed with the Inventory of Cyberbullying Acts at Work (Vranjes, Baillien, Vandebosch, Erreygers, & De Witte, 2018). This 10-item scale measures cyberbullying victimization experiences at work on a 5-point Likert-type scale from *Never* to *Daily* and consists of three types of negative online acts: work-related (e.g., "Your e-mails are forwarded to third parties in order to harm you"), person-related (e.g., "You are being insulted, threatened or intimidated by means of ICT"), and intrusive (e.g., "Your personal information is hacked and used to harm you"). The scale's reliability was good (Cronbach's alpha of .81). For the purpose of this study, the items were dichotomized such that all *Never*-answers were coded as 0 and all others as 1 (indicating victimization).

***Emotion regulation.*** The participants' use of emotion regulation strategies was assessed with the 10-item Emotion Regulation Questionnaire on a 7-point Likert-type scale from *Completely disagree* to *Completely agree* (Gross & John, 2003). This scale consists of two subscales: *Reappraisal* (e.g., "When I want to feel less negative emotions, I change the way I'm thinking about the situation") and *Suppression* (e.g., "When I am feeling negative emotions, I

make sure not to express them”). The subscales showed good reliability in this sample (Cronbach’s alphas of respectively .86 and .85).

### **Procedure**

**Adolescents.** First, the school principals provided active written consent. Then, all the first year students and their parents received leaflets with information about the study. A passive informed consent procedure was followed for the parents, and the students themselves had to provide active consent. Only 14 students opted out. The study also received approval by the Ethics Committee for the Social Sciences and Humanities of the University of Antwerp.

Surveys were administered in classes during school hours, either on paper or electronically, in the presence of a researcher and/or well-informed school staff. The participants did not have to disclose their name and were assured that their data would be treated confidentially. They were encouraged to ask questions verbally if they had trouble understanding survey questions or instructions.

**Adults.** The majority of adults (86%) were contacted via their employing organizations and were provided information about the study by means of e-mail. The remaining participants (14%) were recruited via social media, using the snowballing technique. The response rate for adults recruited through the organizations was 43%. All participants were informed that their participation was voluntary and could be terminated at any time. Surveys were administered electronically, either via the e-mail address of the participants (if contacted via organizations) or an open link (if recruited via social media). Participants were not asked to fill in any personal details and were assured that their data would be treated confidentially. The study received approval by the Social and Societal Ethics Committee of the KU Leuven.

## Data Analysis

We conducted latent class analysis (LCA) with covariates in Mplus 7.4 (Muthén & Muthén, 2015). LCA is a person- and variable-centered technique for examining relationships among observed variables, which allows assignment of individuals to groups or classes based on similar patterns of responses. To explore whether different groups or classes could be distinguished based on their cyberbullying victimization experiences, LCA models were computed for adolescents and adults separately with up to 5 latent classes (see Table 2 & 3). To determine the “true” number of classes, model fit indices and interpretability were evaluated for each model. Six criteria were used: Akaike information criterion (AIC; smaller values are better), Bayesian information criterion (BIC; smaller values are better), the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR LRT; if significant, the model fits better than a model with 1 class less), the bootstrap LR difference test (bootstrap LRT; if significant, the model fits better than a model with 1 class less), entropy (a measure of classification accuracy; the closer to 1, the better), and size of the smallest class (classes with few individuals may raise generalizability issues). For each sample, a model was selected based on a combination of model fit statistics and interpretability.

To examine the association of class membership with emotion regulation strategies, we used the 3-step procedure for auxiliary variables in Mplus to include emotion regulation strategies (mean subscale scores) as latent class predictors (Asparouhov & Muthén, 2014). The first step of this procedure consists of estimating the latent class model using only latent class indicator variables. The latent class posterior distribution from the first step is used to create the classification in the second step. The third step involves regressing the obtained classes on

predictor variables (i.e., mean subscale scores of emotion regulation strategies) while accounting for the misclassification in the second step.

## Results

### Model Selection and Number of Classes

**Adolescents.** For the adolescents, based on the entropy, the three-class-model would be preferred, but the BIC favored the four-class-model and the AIC, VLMR LRT, and bootstrap LRT the five-class-model. The difference between the three- and four-class-model was that a small number of adolescents from the largest class formed a separate, fourth class, which mimicked the pattern of endorsement of cybervictimization items of the second largest class, but at a higher probability. The model with five classes included an extra class with medium endorsement of the same items as the second largest class. Because it was difficult to interpret and label the pattern of these classes and to make the distinction between these classes and the second largest class, the three-class-model was preferred (see Figure 1 and Table 4). The majority of adolescents (68%) displayed a pattern of low probability of endorsing any of the victimization items; therefore this class was labelled the *no cybervictimization* (NC) group. The second largest class (27%) displayed a relatively high probability of endorsing the items on verbal victimization and social exclusion and a relatively low probability on the other items. Because these types of victimization are not specific to the use of digital technologies and also often occur offline, we labelled this class the *similar-to-offline cybervictimization* (StO) group. Thirdly, a small proportion of the adolescents (4%) had a high probability of endorsing all the cybervictimization items; therefore this class was labelled the *pervasive cybervictimization* (PC) group.

**Adults.** For the adults, the AIC and entropy values were in favor of a five-class-model, but the VLMR LRT and bootstrapped LRT of this model were not significant, indicating that this model did not fit better than the model with three classes. Also, the five-class model had one very small class (only 16 individuals). Therefore, the model with three classes was selected (see Figure 2 and Table 5). This model had the best BIC value, a good entropy value and significant VLMR LRT and bootstrapped LRT values. The largest class (80%) displayed a low probability of endorsing any of the cybervictimization items; therefore this class was labeled as the *no cybervictimization* (NC) group. The second largest class (18%) displayed a high probability of endorsing the items specifically indicating work-related aggressive behavior (e.g., “Somebody is withholding e-mails or files you need, making your work more difficult”), but a low probability of endorsing the other items on cybervictimization; therefore this group was labelled as the *work-related cybervictimization* (WRC) group. Thirdly, about 3% of the adults had a higher probability of endorsing all the items than the two other classes. They had an especially high probability of endorsing the items “rumor spreading”, “e-mails, phone calls or messages ignored”, “e-mails forwarded to third parties”, and “work criticized”. Therefore, we labelled this class as the *pervasive cybervictimization* (PC) group.

### **Association of Class Membership with Emotion Regulation**

**Adolescents.** Both classes of cyberbullied adolescents concealed their emotions more often ( $b_{PC \text{ vs } NC} = 0.682, p < .001$ ;  $b_{StO \text{ vs } NC} = 0.932, p < .001$ ) and less often used adjusting ( $b_{PC \text{ vs } NC} = -0.932, p < .001$ ;  $b_{StO \text{ vs } NC} = -0.587, p < .001$ ) regulating styles than non-cyberbullied adolescents. Pervasively cyberbullied adolescents seemed to conceal even more ( $b_{PC \text{ vs } StO} = 0.290, p = .127$ ) and adjust even less ( $b_{PC \text{ vs } StO} = -0.346, p = .110$ ) than the similar-to-offline cyberbullied adolescents, but these differences were not significant.

**Adults.** Pervasive cyberbullied adults appeared to suppress their emotions significantly more than the other two groups ( $b_{PC \text{ vs } WRC} = 0.154, p = .007, b_{PC \text{ vs } NC} = 0.170, p = .001$ ). There was no difference in suppression between the other two groups ( $b_{WRC \text{ vs } NC} = 0.016, p = .436$ ). And there was no effect of reappraisal ( $b_{PC \text{ vs } WRC} = -0.024, p = .562, b_{PC \text{ vs } NC} = -0.040, p = .288, b_{WRC \text{ vs } NC} = -0.015, p = .334$ ).

## Discussion

This study explored whether groups of adolescents and adults can be distinguished by their patterns of cybervictimization and whether membership of these groups is associated with the use of particular emotion regulation strategies. The results of latent class analyses indicated three distinguishable profiles of cybervictimization in both populations: no cybervictimization (80%), work-related cybervictimization (18%), and pervasive cybervictimization (3%) among adults, and no cybervictimization (68%), similar-to-offline cybervictimization (27%), and pervasive cybervictimization (4%) among adolescents. These profiles differed in their use of emotion regulation strategies. In adults, only suppression differed significantly between groups, with pervasive cyberbullying victims displaying significantly higher suppression rates than work-related victims and non-victims. In adolescents, the cyberbullied groups suppressed their emotions significantly more than the other groups, while the non-victimized group used reappraisal significantly more than the other groups.

As for the similarities, we found that the two populations could both be classified into three groups based on their cybervictimization experiences. Both adults and adolescents contained a no cybervictimization and a pervasive cybervictimization group. In addition, the work-related cybervictimization group in adults and the similar-to-offline cybervictimization group in adolescents both shared the characteristic that the type of acts they experience are also

possible in traditional bullying behavior. Additionally, the prevalence rates for the pervasive cybervictimization groups were quite similar (3% of adults and 4% of adolescents). Lastly, we found that in both populations the emotion regulation strategy related to not showing authentic emotions (suppression or concealing) was associated with cyberbullying victimization.

As for the differences, firstly, the prevalence of cyberbullying victimization differed between the samples: Considerably fewer adults than adolescents reported experiencing cybervictimization (20 % versus 32%), which might be related to differences in exposure to and use of ICT. However, this could also relate to the different measurement instruments used and the fact that the adolescent scale also measures cyberbullying behavior not related to the school context, while the adult scale is focused on work related relationships. Secondly, although the adolescent similar-to-offline cybervictimization group and the adult work-related cybervictimization group were similar in that they both experienced forms of behavior that could also occur offline, in adults these forms of behavior interfere with work performance, whereas this is not necessarily the case for adolescents' school functioning. Thirdly, in the adult sample there was no significant association between the emotion regulation strategy of reappraisal and membership of any subgroup. However, we did observe meaningful differences in the adolescent sample with regard to the emotion regulation strategy of adjusting. That is, cyberbullied adolescents used significantly fewer adjusting emotion regulation strategies than non-cyberbullied adolescents. Overall, the associations with emotion regulation appeared to be stronger for adolescents than for adults, which might be an indication that emotion regulation has a stronger link with cyberbullying involvement in adolescence than later in life.

Because we aimed to select suitable and age-appropriate measures for each population, a limitation of our study is that the measures of cyberbullying and emotion regulation were not

entirely equivalent, although, there was a large overlap in the constructs and the meanings of the items. The measure of adult cybervictimization contains items on work-related cybervictimization, whereas the measure of adolescent cybervictimization does not contain school-related cybervictimization items. In fact, measures of adolescent (cyber)bullying generally do not include task-related bullying experiences; they only focus on the social aspects of bullying. However, previous research has shown that victims are cyberbullied most frequently by a student at school, and that perpetrators most frequently cyberbully another student at school (Kowalski & Limber, 2007). Moreover, both the adult and adolescent bullying literature have largely developed around the work and school context respectively. This is because most adults are employed and spend considerable time at work (Major, Klein, & Ehrhart, 2002) and because adolescents in industrialized countries spend the majority of their time in school-related activities (Larson & Verma, 1999).

For emotion regulation, the concepts of reappraisal and adjusting, and suppression and concealing are not fully equivalent, but they have been shown to be highly correlated ( $r = .54$  and  $r = .60$ ; Hofmann & Kashdan, 2010). Furthermore, the authors of the Affective Style Questionnaire explicitly define concealing as “suppression and other response-focused strategies aimed at concealing and avoiding emotions after they arise” (Hofmann, Sawyer, Fang, & Asnaani, 2012, p. 412) and in a study on the validation of the ASQ in a Japanese population, they link adjusting and reappraisal by stating that “one aspect of adjusting is express emotion in accordance with the circumstances. This ability is considered to be required to reappraisal and flexibility” (Ito & Hofmann, 2014, p. 2). The small differences in operationalization of the concepts might be reflected in the results. However, it can be considered a strength that despite these differences, we still found large similarities in the patterns of both samples.

These findings have several implications. First of all, we observed similar patterns of cybervictimization in the adult and the adolescent sample. This is an important finding as it suggests that, despite their very different context, some similarities in this phenomenon exist: Either individuals are not cyberbullied at all, or they experience is similar to traditional cyberbullying behavior, or they experience almost all types of negative online behavior. Future studies could include traditional bullying behavior to investigate how these relate to their online counterpart in both samples, as has previously been studied in the adolescent literature (Wang et al., 2012, 2010).

Second, in both samples, we found an association between emotion regulation and cyberbullying victimization. This adds to the literature as emotion regulation strategies have mostly been investigated in relation to cyberbullying perpetration (Baroncelli & Ciucci, 2014; Kokkinos & Voulgaridou, 2017). However, while empirical evidence suggests that emotion regulation plays a uniquely important role for cyberbullying but not for traditional bullying (Baroncelli & Ciucci, 2014; Cross et al., 2015), no explanations have been put forward so far as to why this relationship would exist. We suggest that this might be related to dysfunctional emotion-driven behavior committed online by individuals who are not capable of effectively regulating their negative emotions. In support, several recent studies have found that posting messages regarding negative affect and posting indiscrete or negative content puts individuals at risk of becoming cyberbullied (Dredge, Gleeson, & de la Piedad Garcia, 2014; Peluchette, Karl, Wood, & Williams, 2015). Furthermore, negative emotionality motivates people to engage in risky behavior in order to escape these aversive emotional states (Cooper, Agocha, & Sheldon, 2000) and this behavior again heightens the chance of becoming victimized online (Erdur-Baker, 2010; Li, 2006; Wolak, Mitchell, & Finkelhor, 2007; Ybarra & Mitchell, 2004).

However, due to the cross-sectional nature of this study, the direction of causality cannot be established. Empirical evidence suggests that reappraisal is an adaptive emotion regulation strategy, related to greater experience and expression of positive emotions, and less experience and expression of negative emotions (Gross & John, 2003; Larsen et al., 2012). Suppression, however, is found to have negative effects, such as reduction of positive affect, weakening of social ties, and avoidant, diverted, and anxious relational behavior (Gross & John, 2003; John & Gross, 2004; Larsen et al., 2012). We therefore believe that individuals who often suppress their emotions are at greater risk of becoming victimized, while reappraisal acts as a protective factor (Vranjes et al., 2017). However, some empirical evidence also suggests that in order to cope with cyberbullying, many victims use passive emotion-focused coping strategies (Lodge & Frydenberg, 2007; Mahady Wilton, Craig, & Pepler, 2000). Additionally, this type of coping is generally ineffective (Mahady Wilton et al., 2000), making individuals even more vulnerable to abuse. This would explain why the pervasively cybervictimized group displayed the highest levels of suppression. Future studies should therefore apply longitudinal or experimental designs in order to test the direction of causality in the link between suppression and cybervictimization.

### **Conclusion**

Among adolescents as well as adults, three groups of people can be distinguished based on their pattern of cyberbullying victimization experiences: no cybervictimization, similar-to-offline (for adolescents) or work-related (for adults) cybervictimization, and pervasive cybervictimization. The use of suppressing emotion regulation strategies is associated with severe cyberbullying victimization in adolescents as well as in adults. Thus, suppressing emotions seems to be related to cyberbullying involvement in adolescence as well as in

adulthood, and considering emotion regulation strategies might be a useful addition for cyberbullying prevention and intervention approaches.

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## Tables

Table 1

### Descriptive Statistics of the Adolescent and Adult Sample

Variable	<i>N</i> items	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3
	Adolescents						
1. Cyberbullying victimization	11	0.13	0.17	.79	-		
2. Adjusting	7	3.07	0.83	.77	-.19***	-	
3. Concealing	8	2.75	0.77	.74	.05	.37***	-
	Adults						
1. Cyberbullying victimization	10	1.10	0.23	.81	-		
2. Reappraisal	6	4.23	1.06	.86	-0.1	-	
3. Suppression	4	3.69	1.22	.85	.10*	.25*	-

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Table 2

### Fit Indices of the Latent Class Models for the Adolescent Sample

Classes	1	2	3	4	5
AIC	13019.903	11231.692	10979.877	10904.958	10872.488
BIC	13079.222	11356.977	11170.528	11160.975	11193.871
VLMR LRT $p$	n/a	<.001	.015	.002	.041
Bootstrap LRT $p$	n/a	<.001	<.001	<.001	<.001
Entropy	n/a	.826	.863	.828	.810
Smallest class size	1715	503	74	65	64

*Note.* AIC = Akaike information criterion; BIC = Bayesian information criterion; VLMR LRT  $p = p$ -value of the Vuong-Lo-Mendell-Rubin likelihood ratio test; Bootstrap LRT  $p = p$ -value of the bootstrap likelihood ratio test.

Table 3

### Fit Indices of the Latent Class Models for the Adult Sample

Classes	1	2	3	4	5
AIC	5920.553	5245.171	5151.112	5132.013	5137.095
BIC	5973.179	5355.686	5319.516	5358.306	5421.277
VLMR LRT $p$	n/a	<.001	.004	.100	0.714
Bootstrap LRT $p$	n/a	<.001	.004	.102	0.718
Entropy	n/a	.827	.817	.849	.873
Smallest class size	1426	212	38	13	16

*Note.* AIC = Akaike information criterion; BIC = Bayesian information criterion; VLMR LRT  $p = p$ -value of the Vuong-Lo-Mendell-Rubin likelihood ratio test; Bootstrap LRT  $p = p$ -value of the bootstrap likelihood ratio difference test.

Table 4

Class Response Percentages for the European Cyberbullying Intervention Project Questionnaire (Adolescent Sample)

Item	No CV	StO CV	Pervasive CV
1 Someone said nasty things to me or called me names using texts or online messages	10,1	84,8	83,6
2 Someone said nasty things about me to others either online or through text messages	9,1	90,8	83,7
3 Someone threatened me through texts or online messages	0,8	21,6	48,5
4 Someone hacked into my account and stole personal information (e.g. through email or social networking accounts)	0,9	1,3	69
5 Someone hacked into my account and pretended to be me (e.g. through instant messaging or social networking accounts)	1,4	0,8	62,7
6 Someone created a fake account. pretending to be me (e.g. on Facebook or MSN)	0,6	1,7	35
7 Someone posted personal information about me online	4,6	20,4	51,6
8 Someone posted embarrassing videos or pictures of me online	2,5	12,7	37,6
9 Someone altered pictures or videos of me that I had posted online	4,1	10,3	47,5
10 I was excluded or ignored by others in a social networking site or internet chat room	5,6	31,7	43,9
11 Someone spread rumours about me on the internet	6,3	51,3	55,2

Note. CV = cybervictimization; StO = similar to offline.

Table 5

Class Response Percentages for the Inventory of Cyberbullying Acts at Work (Adult Sample)

Item	No CV	WR CV	Pervasive CV
1 Your personal information is hacked and used to harm you	0,4	2,8	16,1
2 Somebody takes over your identity	0,7	0,5	15,8
3 Personal information about you is shared online or distributed via messages to others	0,5	4,1	29,8
4 Rumours or gossips are being spread about you by means of ICT	1,9	3	80
5 You are being insulted. threatened or intimidated by means of ICT	0	3,2	40,7
6 Constant remarks are being made about you and your private life by means of ICT	0,5	0,8	55,2
7 Your e-mails, phone calls or messages are ignored at work.	3	49,6	67,6
8 Your e-mails are forwarded to third parties in order to harm you.	0,5	25	63,9
9 Your work is criticized publicly by means of ICTs.	11,3	72,7	76,1
10 Somebody is withholding e-mails or files you need. making your work more difficult.	2,6	34,2	55,3

Note. CV = cybervictimization; WR = work-related.