

Chapter 7

# General Discussion

## General Discussion

The aim of the current research was to unravel why victimized adolescents become cyberbullies. Based on the extant literature and preliminary empirical data, we proposed a Cyclic Process Model of cyberbullying behavior (Figure 1). In testing this model, results showed that victimized adolescents experience anger and frustration. In their anger, they turn towards media with antisocial and risk behavior content, which subsequently instigates the adolescents' cyberbullying behavior. The adolescent gets caught up in a cyclic process, since cyberbullies often become the target of bullying behavior again. Also, adolescents that apply negative emotion regulation strategies to cope with their anger are most susceptible for the effect of anger on cyberbullying behavior. This final chapter summarizes and reflects on the main findings as presented in this dissertation.

### Main finding 1

**A new instrument was developed to measure adolescents' exposure to media with antisocial and risk behavior content, the Content-based Media Exposure Scale (C-ME). This easy to use measure showed to be both reliable and valid.**

Media in which antisocial and risk behavior is portrayed (such as aggressiveness, alcohol and substance abuse, sexual behaviors, and vandalism) is highly popular among adolescents (Brown & Witherspoon, 2002; Strasburger, 2009; Strasburger, Jordan, & Donnerstein, 2010). In order to examine the role of adolescents' exposure to media with antisocial and risk behavior content on cyberbullying behavior, we first had to develop an instrument that assesses such media exposure, because no standardized instrument for assessing individual differences in media consumption existed. Although today's media landscape does not differentiate anymore between different media outlets and most adolescents multi-task by consuming more than one type of media at a time, such as playing a video game on their smart phone while watching television (Rideo, Foehr, & Roberts, 2010), most media exposure measures assess frequency of exposure to a particular medium (e.g., watching TV or playing video games) without discerning the specific content to which one has been exposed. Moreover, most measurement instruments that *do* assess content of media exposure are limited to measuring violent media content, whereas it is important to not only measure violent media content, but also

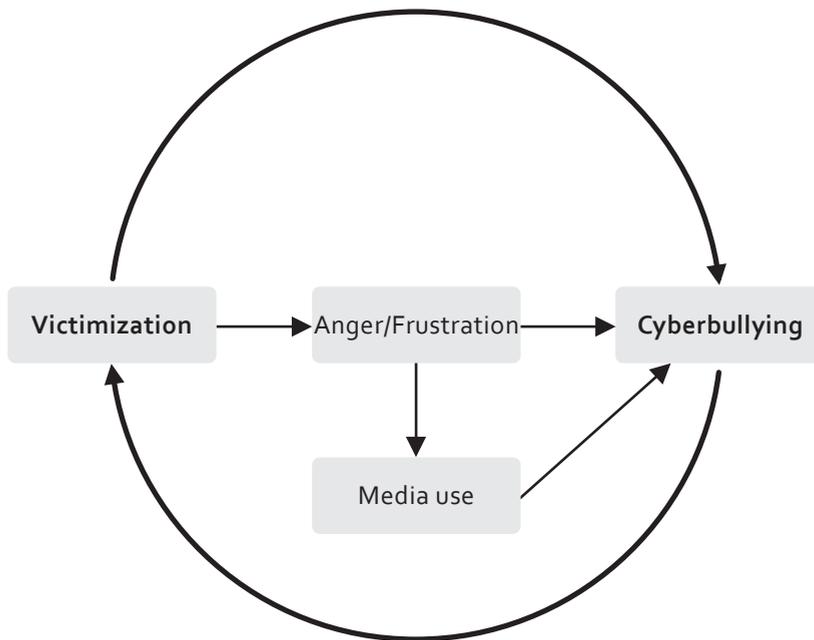


Figure 1. *The Cyclic Process Model*

more broader antisocial and risk behaviors. To overcome the difficulties with general media exposure measures and measures solely focusing on violent media, we developed a measurement instrument, which assesses both the content and frequency of adolescents' exposure to media with antisocial and risk behavior content, regardless of how the media is consumed (**Chapter 2**). The Content-based Media Exposure Scale (C-ME) was tested among over 2000 adolescents and proved to be a reliable and easy to use instrument that measures media exposure in today's (new) media landscape.

### **Main finding 2**

**The relation between victimization and cyberbullying behavior can be explained by feelings of anger and frustration and exposure to media with antisocial and risk behavior content: the Cyclic Process Model.**

We first tested the Cyclic Process Model in a cross-sectional design and found that all hypothesized pathways were supported by the data (**Chapter 3**). Being victimized indeed related to increased levels of anger. These increased

levels of anger resulted in higher exposure to media in which antisocial and risk behaviors are portrayed (measured by the C-ME, described in **Chapter 2**), which in turn stimulated cyberbullying behaviors. Note however that the last step of the model (i.e., cyberbullies become victims again) could not be tested due to the cross-sectional nature of the study (i.e., a measured variable cannot be used twice in a cross-sectional path model). Although these results were encouraging, a cross-sectional design cannot assess whether the Cyclic Process Model would hold over a longer time span. Therefore, a next study was set up using a longitudinal design.

The longitudinal data analyses confirmed our assumptions about the mechanisms underlying the relation between victimization and cyberbullying behavior, showing that these processes not only take place on a certain time point, but also over time (**Chapter 4**). The results showed that the relation between victimization and becoming a cyberbully was mediated by experiencing feelings of anger and frustration and by exposure to media with antisocial and risk behavior content (see Figure 2). Because of this complete mediation, the direct effects of victimization and of anger, respectively, on cyberbullying behavior disappeared (visualized by the grey arrows in Figure 2). This clearly indicates that victimization is followed by anger and frustration, which instigates using media portraying antisocial and risk behavior, which, in turn, stimulates to perform cyberbullying behavior. Also, the feedback loop from cyberbullying at the final stage, back to victimization, was supported by the longitudinal data, closing the cycle.

Together, the cross-sectional and longitudinal studies confirmed a cyclic relation between victimization and cyberbullying, mediated by anger and media exposure. These findings confirm and extend related research. Empirical evidence for the mediating role of anger between victimization and cyberbullying behavior was found in one other study (Ak, Özdemir, & Kuzucu, 2015). In addition, a relationship between media exposure and cyberbullying was found before, albeit limited to *violent* media (e.g., Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Chang et al., 2014; Dittrick, Beran, Mishna, Hetherington, & Shariff, 2013; Fanti, Demetriou, & Hawa, 2012; Lam, Cheng, & Liu, 2013). Furthermore, the amplifying role of media exposure on deviant behavior was in line with theories such as the Social Cognitive Theory (Bandura, 2001), the Downward Spiral Model (Slater, Henry, Swaim, & Anderson, 2003), and the General Aggression Model (Bushman & Anderson, 2002). The Cyclic Process Model adds to the understanding of the underlying processes of

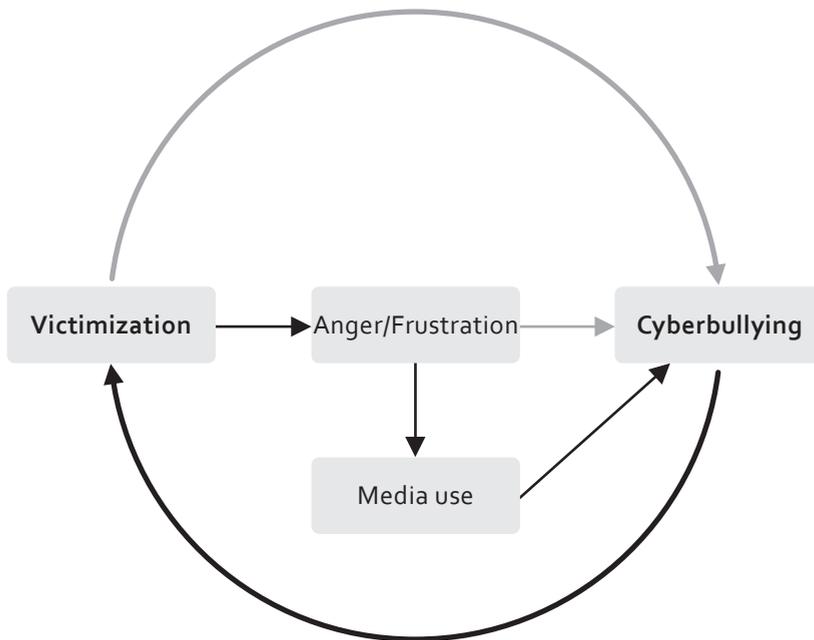


Figure 2. The Cyclic Process Model over the Course of one Academic Year

becoming a cyberbully and is, as far as we know, the first theoretical model that includes media exposure to explain adolescents' cyberbullying behavior.

### Main finding 3

**Exposure to media with antisocial and risk behavior content contributes to higher initial cyberbullying behavior rates and reinforces cyberbullying behavior over time.**

To further increase our insights in the role of media use in cyberbullying behavior, additional analyses on the longitudinal data were performed (Chapter 5). Following the rationale of the Social Cognitive Theory (Bandura, 2001), the Downward Spiral Model (Slater et al., 2003), the General Aggression Model (Bushman & Anderson, 2002), and the results of our previous studies (Chapter 3 & 4), we tested whether adolescents' exposure to media with antisocial and risk behavior content would serve as an amplifier of cyberbullying behavior *over time*. The results showed that adolescents who more intensely used media with antisocial content, also had higher levels of cyberbullying

rates at the first wave compared to those lower in such media use. Importantly, results further underscored that an increase in exposure to media with antisocial content goes hand in hand with an increase in cyberbullying behavior over time (see Figure 3).

In **Chapter 5**, we further examined whether the effect of media exposure on cyberbullying behavior differed between boys and girls. As described in the General Introduction (**Chapter 1**), research on gender differences in cyberbullying behavior showed mixed results thus far. However, boys in general tend to be more attracted to media with antisocial and risk behavior content than girls (e.g., Konijn, Nije Bijvank, 2007; Möller, Krahé, Busching, & Krause, 2011). Hence, we hypothesized that cyberbullying behavior increases more strongly over time for boys than for girls. However, the results indicated that in comparable degree, for both boys and girls, cyberbullying rates increase as a function of exposure to media with antisocial and risk behavior content. These results underscore that media exposure not only affects behavior for boys, but also for girls.

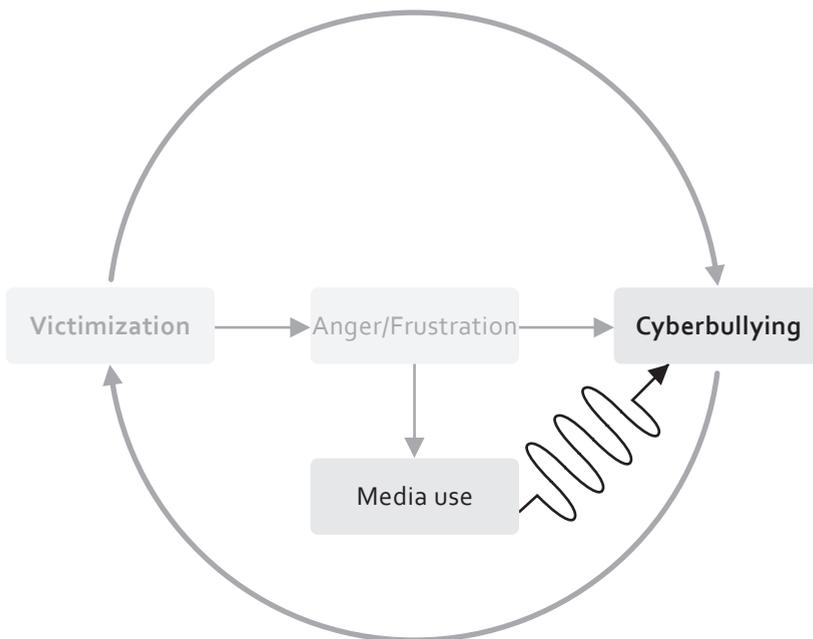


Figure 3. The Impact of Media Exposure on Cyberbullying Behavior

#### Main finding 4

**Applying negative emotion regulation strategies to deal with anger and frustration (caused by being victimized) reinforces the effect of anger on cyberbullying behavior.**

Victimized adolescents often use negative or ineffective strategies to deal with the victimization (e.g., Camodeca & Goossens, 2005; Rieffe et al., 2012; Spence et al., 2009). Furthermore, adolescents who are less able to regulate their emotions are more at risk to become cyberbullies and/or offline bullies (e.g., cyberbullying behavior: Baroncelli & Ciucci, 2014; e.g., offline bullying behavior: Candelaria, Fedewa, & Ahn, 2012; Champion, 2009; Lonigro, Schneider, Laghi, Baiocco, Pallini, & Brunner, 2014; Lovegrove, Henry, & Slater, 2012). In line with these findings, in **Chapter 6**, we examined whether adolescents who apply negative strategies in order to regulate their anger and frustration (caused by the victimization) would experience an increased susceptibility for the effect of anger on cyberbullying behavior (see Figure 4). Negative emotion regulation strategies applied by those victims are blaming others or oneself (“other blame” and “self-blame”), thinking about how terrible

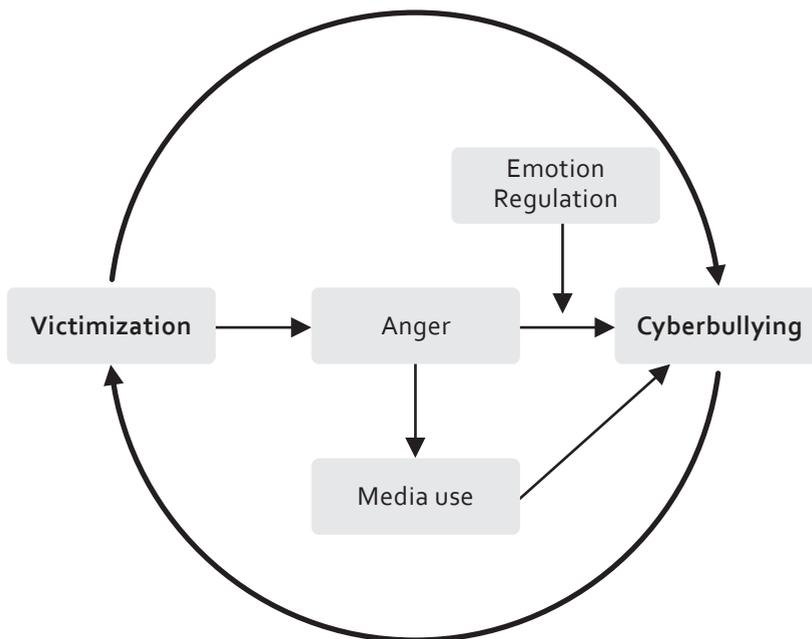


Figure 4. The Effect of Emotion Regulation Strategies on Cyberbullying Behavior

the event was (“catastrophizing”), or constantly reminiscing the stressful event (“rumination”). Indeed, applying negative emotion regulation strategies reinforced the effect of anger on cyberbullying behavior. Those adolescents that applied negative strategies to cope with their victimization-induced anger and frustration performed more cyberbullying behavior than those that did not.

### **Theoretical Implications for Future Research**

The studies reported in this dissertation identify the core processes that can turn victimized adolescents into potential cyberbullies. Implications that arise from the empirical support for the Cyclic Process Model and the reinforcing impact of anger and exposure to media with antisocial and risk behavior content on cyberbullying behavior are manifold. On a theoretical level, in line with previous research, the results of our studies show that emotions play a key role in adolescents’ media exposure (anger as predictor of media exposure: e.g., Arnett, 1996; Flammer & Schaffner, 2003; Olson et al., 2007; Olson, Kutner, & Warner, 2008; Plaisier & Konijn, 2013). In our studies, the emotions anger and frustration predict adolescents’ exposure to media with antisocial content. This raises the question why this relation between **anger and media exposure** exists. For example, previous research showed that adolescents believe that exposing themselves to violent media content (e.g., by playing violent video games) is an effective way of releasing or venting their anger (cf. Catharsis; Aristotle, 335 BC, in gaming: e.g., Olson et al., 2008). However, other studies showed that gaming actually induced anger, which shows a discrepancy in what adolescents think will happen with their anger and what actually happens (e.g., Bushman & Whitaker, 2010). Future research is needed to investigate the extent to which adolescents believe exposure to antisocial and risk behavior media content would relieve them from unpleasant feelings, such as victimization-based anger.

And more in general, little is known about the role of **emotion in media use and effects**. Not only victimized angry adolescents experience a strong attraction towards media with antisocial and risk behavior content (as our research shows), the same is true for adolescents that feel rejected by their peers. One study showed that higher levels of anger in peer-rejected adolescents resulted in an increased preference for media with antisocial and risk behavior content (Plaisier & Konijn, 2013). Research is warranted to examine how adolescents use media to deal with their emotions. In addition, in order to prevent the

detrimental effects media exposure could have on adolescents' behavior, future research is needed to investigate how we can teach adolescents to deal with such unpleasant emotions as anger and frustration.

A related issue is the behavioral impact of adolescents' media exposure. Our studies demonstrate that exposure to antisocial and risk behavior content reinforces cyberbullying behavior. A question raised is whether exposure to **prosocial media content** could perhaps reduce adolescents' cyberbullying behavior. Former studies showed that media with prosocial content increased prosocial behaviors, such as helping others, cooperating, sharing, and empathy (e.g., Gentile et al., 2009; Taylor, 2006). Possibly, exposure to this type of media content could also decrease the tendency to perform cyberbullying behavior. In addition to antisocial and risk behavior content, as measured by the Content-based Media Exposure Scale (C-ME; see **Chapter 2**), measuring prosocial media exposure in adolescents would serve as a tool in testing this effect. The prosocial dimension in the C-ME was recently added and is currently tested in validation studies.

Future research is further warranted to examine whether the Cyclic Process Model works differently for adolescents with different **personality traits**. For example, low empathy is a predictor of cyberbullying behavior (e.g., Ang & Goh, 2010; Steffgen, König, Pfetsch, & Meltzer, 2011). It is therefore conceivable that the Cyclic Process Model works differently for adolescents who are low versus high in empathy. That is, it could be hypothesized that victimized adolescents who are high in empathy do not become angry when victimized or have a stronger tendency to apply positive emotion regulation strategies. Or, perhaps when these adolescents do become angry following victimization, high empathic adolescents use other means to cope with their anger and do not turn to media with antisocial and risk behavior content or do not perform cyberbullying behavior.

Another factor that needs further attention in relation to the Cyclic Process Model is the **social context** of adolescents. For example, research showed that a positive school climate, in which adolescents feel safe to report bullying incidents and feel that they are taken seriously, helps to reduce (cyber) bullying behavior (e.g., Hinduja & Patchin, 2012). Perhaps, the Cyclic Process Model works differently in different school climates. Questions raised are whether adolescents who feel supported by their social context become less angry after being victimized, or whether a positive school climate helps these victimized adolescents to cope with their anger, which possibly decreases

the consequential effects of anger (i.e., on media exposure and cyberbullying behavior). Studying the role of school climate (positive vs. negative vs. neutral) on the Cyclic Process Model could possibly help to answer these questions.

Overall, the findings of our research provide ample opportunities for future theoretical research, such as investigating the role of emotions in media use and effects, or examining the effect of prosocial media content, personality traits such as empathy, and social context on cyberbullying behavior.

### **Methodological Limitations and Implications for Future Research**

Some methodological limitations of the present studies may be addressed in future research. First, the use of the Content-based Media Exposure Scale (C-ME; **Chapter 2**) may be seen by some as a limitation, because it is a newly developed scale. However, we argue that it is important to measure the impact of the *content* of exposure to media rather than just the frequency of watching television or playing video games, for example. Whereas most media exposure instruments measure violent media content or how often adolescents use certain types of media outlets (e.g., television, games), we broadened the scope of media exposure to also include other types of *antisocial and risk behavior* content, because such content is highly popular among adolescents and similar effects could be expected as from violent media per se (e.g., Brown & Witherspoon, 2002; Strasburger, 2009; Strasburger et al., 2010). Towards this end, we developed a measurement instrument to assess specific *content*-based media exposure, independent of media channel, rather than the *frequency* of exposure to a particular media outlet alone (e.g., solely movie violence). The C-ME has currently been tested among over 2000 adolescents in different samples (independent from those described in **Chapters 3–6**) and shows to have good psychometric qualities (**Chapter 2**). In fact, the antisocial and risk behavior factor of the C-ME showed to be more strongly related to aggressiveness than a traditional media exposure instrument that solely measured *violent* media content (see **Chapter 2**). Future research is needed to test the effect of exposure to media with antisocial and risk behavior content on other behaviors than cyberbullying behavior alone.

Second, cyberbullying behavior was measured using a self-report scale. Limitations of self-report are widely acknowledged. However, this problem with using a self-report scale is very common in cyberbullying research, because methods to avoid self-report (such as peer nominations) do not necessarily provide more accurate responses than self-report measures. Actually, using

peer nominations would probably be more problematic, because cyberbullying behavior can be performed anonymously, without any peers knowing. Cyberbullying behavior is a sensitive topic and the found estimates could well be an underestimation of the true estimates, due to social desirability in answering (e.g., Dehue, Bolman, & Völlink, 2008; Gradinger, Strohmeier, Schiller, Stefanek, & Spiel, 2012; Kowalski & Limber, 2007; Schoffstall & Cohen, 2011; Walrave & Heirman, 2011). Therefore, research is warranted to find solutions for this difficulty in measuring cyberbullying behavior with self-report measures.

Third, cyberbullying behavior is changing rapidly (e.g., think of the abundant rise of new formats of social media in which cyberbullying could occur). It is difficult to find a measure that captures all variations of cyberbullying behavior. When we started our research, we chose to use the Cyberbullying Questionnaire (CBQ; Calvete et al., 2010), which was then among the best available cyberbullying behavior measures (e.g., because the CBQ measures various forms of cyberbullying). We are aware that ever since, new types of cyberbullying have emerged (for example, shaming someone on Twitter), but we decided to stick with the CBQ for reasons of consistency in our studies and comparability with other studies. Thus, it is possible that the cyberbullying scores in our research are underestimations and that we did not capture all types of cyberbullying. However, even under these circumstances, our results showed a cyclic relation between victimization and cyberbullying behavior, anger, and especially, exposure to media with antisocial and risk behavior content. Likewise, we found an increase in cyberbullying behavior over time as a function of media use. In future research, possibilities for measuring cyberbullying behavior need to be examined to not only overcome the self-report issue, but also to keep up with the rapidly changing manners in which cyberbullying can occur.

Another topic of research that needs more testing is the mediating effect of media exposure in the relation between anger and cyberbullying behavior. In both our cross-sectional (**Chapter 3**) and longitudinal studies (**Chapter 4**), exposure to media with antisocial and risk behavior content significantly mediated the relationship between anger and cyberbullying behavior. Although in our cross-sectional study, the direct effect between anger and cyberbullying behavior remained significant after controlling for media exposure, in our longitudinal study, this direct effect disappeared. Thus, replication studies are needed to test under which circumstances media exposure increases or decreases the relationship of anger and cyberbullying behavior.

### **Practical Implications for Interventions: How to Break the Cycle?**

Our research shows that victimized adolescents could get caught up in a cyclic process of being victimized, becoming a cyberbully and turn into a victim again. The main question that arises from these findings is how this cycle can be broken, and how intervention programs could help to achieve this.

The cyclic process starts with being a victim of offline or online bullying. Naturally, **preventing adolescents to become victimized** would be the most effective way of helping the cyclic processes to even start. There are various intervention programs against offline bullying that showed to be successful, for example by introducing school rules against bullying or providing class meetings to talk about bullying (for a summary, see Smith, 2014, pp. 169-183). As for cyberbullying behavior, currently, a shift can be detected in cyberbullying research from merely descriptive and predictive onto increasing our understanding and investigating ways to combat cyberbullying behavior. This resulted in empirically supported effectiveness of various intervention programs, which, for example, included increasing teachers awareness of cyberbullying acts, increasing students' social skills and conflict resolution strategies, and underscoring the importance of online privacy settings (e.g., Della Cioppa, O'Neil, & Craig, 2015; Hinduja & Patchin, 2014; Ortega-Ruiz, Del Rey, & Casas, 2012; Van den Broeck, Poels, Vandebosch, & Van Royen, 2014). Thus, anti-(cyber)bullying programs could help in preventing adolescents to become victims of (cyber)bullying behavior, which thereby avoids that these adolescents get caught up in the cyclic processes that take place after being victimized.

Next to preventing adolescents to become victimized, several other opportunities of breaking the cyclic processes arise from our findings. For example, our research demonstrates the mediating effect of anger and frustration in the relation between victimization and cyberbullying behavior, which stresses the importance of **adaptive coping styles** for these negative emotions (**Chapter 6**). Following our findings, discouraging adolescents to apply negative emotion regulation strategies could possibly help to alter their tendency to perform cyberbullying behavior, and therefore help break the cycle. For example, perhaps mindfulness techniques could be used to discourage an adolescent to blame his/herself for being bullied. There are some studies that introduced mindfulness techniques (such as quieting the mind, mindful attention, managing negative emotions, and acknowledgement of self and others: Schonert-Reichl & Lawlor, 2010) into adolescent life to help them deal

with unpleasant emotions (e.g., Burke, 2009; Thompson & Gauntlett-Gilbert, 2008). Unpleasant emotions, in particular anger, are an important determinant of cyberbullying behavior (Lonigro et al., 2014). Therefore, examining the effects of both emotion regulation strategies and mindfulness techniques on adolescents' anger could possibly lead to a crucial step in battling cyberbullying behavior.

Finally, our research showed that exposure to media with antisocial and risk behavior content plays an important part in adolescents' cyberbullying behavior. Adolescents who are often exposed to this type of media content in trying to cope with victimization-based anger are inclined to perform cyberbullying behavior. One way in which parents and educators could play a role in this context could perhaps be to restrain the adolescent to be exposed to antisocial and risk behavior content in media, and thereby **restricting their media diet**. Parental restrictions in adolescents' media use showed to help in reducing risky behaviors, such as early sexual behaviors (e.g., Parkes, Wight, Hunt, Henderson, & Sargent, 2013; Schooler, Kim, & Sorsoli, 2006) and tobacco and alcohol use (e.g., Sargent et al., 2005; Tanski, Dal Cin, Stoolmiller, & Sargent, 2010). However, since antisocial media content is omnipresent and adolescents will somehow be exposed to this, it is possibly a better solution to teach adolescents how media exposure could affect their behavior and take a more reflective attitude. Several initiatives exist that aim to achieve this awareness in children and adolescents. For example, in the Netherlands, the *National Media Passport* training helps children to become aware of the amount of media they are consuming and helps them to understand how media can influence their behavior.<sup>9</sup>

### General Conclusion

Our research expands the understanding of the mechanisms underlying the relation between being bullied and becoming a cyberbully. The Cyclic Process Model describes how victimized adolescents experience negative emotions (i.e., anger and frustration) and by seeking relief in media with antisocial and risk behavior content, they risk to become cyberbullies themselves. This does not solve anything, since cyberbullies often become victims again. Furthermore, the findings underpin the alarming impact of exposure to media with antisocial and risk behavior content in this process. The Cyclic Process Model is the first to

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<sup>9</sup> <http://www.nationaalmediapaspoort.nl>

integrate media exposure into a theoretical model of cyberbullying, providing insight into the processes underlying cyberbullying and their evolvement over time. In this way, our research brings us one step further in our understanding of the minds of cyberbullies and victims, which in many cases might be one and the same mind. In closing, we pose the critical follow-up question: how can we change their mind?