



8-2018

Violent Media Exposure and Bullying Behaviors: The Moderating Roles of Parental Monitoring, Emotion Regulation, and Gender

Brianna Elizabeth Pollock

University of Tennessee, Knoxville, bpollock@vols.utk.edu

Recommended Citation

Pollock, Brianna Elizabeth, "Violent Media Exposure and Bullying Behaviors: The Moderating Roles of Parental Monitoring, Emotion Regulation, and Gender." PhD diss., University of Tennessee, 2018.
https://trace.tennessee.edu/utk_graddiss/4799

This Dissertation is brought to you for free and open access by the Graduate School at Trace: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Doctoral Dissertations by an authorized administrator of Trace: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

To the Graduate Council:

I am submitting herewith a dissertation written by Brianna Elizabeth Pollock entitled "Violent Media Exposure and Bullying Behaviors: The Moderating Roles of Parental Monitoring, Emotion Regulation, and Gender." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

L. Christian Elledge, Major Professor

We have read this dissertation and recommend its acceptance:

Jenny A. Macfie, Todd M. Moore, Heidi E. Stolz

Accepted for the Council:

Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

Violent Media Exposure and Bullying Behaviors:
The Moderating Roles of Parental Monitoring, Emotion Regulation, and Gender

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Brianna Elizabeth Pollock

August 2018

Acknowledgement

Completion of this dissertation would not have been possible without the enduring love and support of my partner, Douglas, and my best friends and colleagues, Jerika and Alex. I am equally grateful for the wisdom, flexibility, and guidance of my mentor, Chris Elledge, throughout this dissertation process and my graduate training. Also, of course, my lab-mates, Marisa, Sam, Katie and Cara, who have always encouraged, strengthened, and laughed with me. I truly appreciate and hold close everything and everyone I have had the pleasure of working with and learning from during my graduate training.

Abstract

The influence of violent media exposure on the development of aggression has received increased attention in recent years. Research supports a relationship between exposure to violent media and aggressive behavior. Few studies have examined the relationship between exposure to violent media and a specific form of aggressive behavior, bullying. The current study aimed to expand on previous research by examining the relationship between the violent media exposure and self-, peer-, and teacher-reported bullying behavior using a longitudinal design with 457 3rd and 4th grade elementary students. Another aim of the current study was to examine the extent to which gender, parental media monitoring and children's emotional regulation ability moderated the prospective relationship between the violent media exposure and bullying behavior. Findings from the current investigation did not support a positive relationship between violent media exposure and self-, teacher-, or peer-reported bullying behaviors. In fact, violent media exposure emerged as a significant, negative predictor of self-reported overt and relational bullying. There was no evidence that gender, parental media monitoring, or children's emotional regulation ability moderated the relation between violent media exposure and bullying.

Table of Contents

Chapter 1: Introduction	1
Chapter 2: Method.....	14
Chapter 3: Results	22
Chapter 4: Discussion.....	26
List of References.....	37
Appendix.....	52
Vita.....	85

List of Tables

Table 1. Descriptive Characteristics for Primary Study Variables.....	51
Table 2. Correlations among Primary Study Variables.....	52
Table 3. Hypothesis 1: Gender Differences among Primary Study Variables.....	53
Table 4. Parameter Estimates for Overt Bullying from the Model for Hypothesis 2.....	55
Table 5. Parameter Estimates for Relational Bullying from the Model for Hypothesis 2.....	56
Table 6. Parameter Estimates for Overt Bullying and 2-way Interaction from the Model for Hypothesis 3.....	57
Table 7. Parameter Estimates for Relational Bullying and 2-way Boy Interaction from the Model for Hypothesis 3.....	58
Table 8. Parameter Estimates for Overt Bullying and 2-way interactions with Moderating Variables from the Model for Hypothesis 4.....	59
Table 9. Parameter Estimates for Relational Bullying and 2-way Interactions with Moderating Variables from the Model for Hypothesis 4.....	61
Table 10. Parameter Estimates for Overt Bullying and 3-way Interactions with Moderating Variables and Boy from the Model for Hypothesis.....	63
Table 11. Parameter Estimates for Relational Bullying and 3-way Interactions with Moderating Variables and Boy from the Model for Hypothesis 5.....	65

Chapter 1: Introduction

The influence of violent media exposure on the development of aggression has received increased attention in recent years. Research supports a relationship between exposure to violent media and aggressive behavior (Anderson et al., 2007). One specific form of aggressive behavior, bullying, is associated with significant negative outcomes for both the perpetrators and victims of bullying. The few studies that have examined the relation between violent media exposure and bullying behavior have produced mixed results. The current study aimed to expand on previous research by examining the relationship between violent media exposure and self-, peer-, and teacher-reported bullying behavior using a longitudinal design. Also examined in the current study was whether gender, parental media monitoring, and children's emotional regulation ability moderate the prospective relationship between violent media exposure and bullying behavior.

A large literature has investigated the causes, consequences, and interventions for aggressive, violent, and antisocial behavior. Aggression is commonly defined as a set of behaviors carried out with the intention of inflicting harm on another person who is motivated to avoid the harm (Anderson & Bushman, 2002; Baron & Richardson, 1994). Aggressive behavior is markedly stable from early childhood through adolescence and young adulthood (Loeber, 1982). In fact, it has been argued that the stability of aggression is comparable to that of intelligence (Huesmann et al., 1984, Olweus, 1979), which suggests prevention efforts need to focus on identifying factors early in development that are malleable and predict change in children's trajectory of aggression over time.

Researchers have identified several factors reliably associated with children's aggression and conduct problems, including genetic and biological, individual, familial, social-cultural,

situational, and social-cognitive (for a review see Dodge & Pettit, 2003). Several meta-analyses have found violent media use (e.g., video games, television) is positively associated with aggressive behavior (e.g., Anderson & Dill, 2000; Anderson et al., 2007; Anderson et al., 2010; Bartholow & Anderson, 2002; Ferguson & Kilburn, 2009; Konijn, Nije Bijvank, & Bushman, 2007; Sherry 2001, 2007) and negatively associated with prosocial and cooperative behavior (Anderson & Bushman, 2001; Sheese & Graziano, 2005). Despite these associations, there is considerable variability in the strength of these relations and in their interpretation (Ferguson & Rueda, 2010). It is likely the variability stems in part from different methodology for measuring and defining aggression or from variability in the analytic techniques used to examine the association between violent media use and aggression (e.g. inclusion or exclusion of control variables; Ferguson & Olson, 2014). Still, there is compelling evidence that exposure to violent media influences aggressive behavior.

Results from longitudinal investigations have led researchers to different conclusions about the processes underlying the association between violent media use and aggression. Some longitudinal studies suggest a direct link or socialization effect of violent media use on later aggression (Anderson, Sakamoto, Gentile, Ihoria, Shibuya, Yukawa, et al., 2008; Willoughby, Adachi, & Good, 2012). In other words, exposure to violent media directly influences youth's level of aggression. Others propose the link is explained by a selection effect, such that individuals with biological or genetic predispositions gravitate toward violent media, suggesting no direct causal link (Breuer, Vogelgesang, Quandt, & Festl, 2015; Von Salisch, Vogelgesang, Kristen, & Oppl, 2011). These two opposing explanations are displayed in several theoretical perspectives that attempt to clarify the link between media violence use and aggression.

Theories of Aggression

The catalyst model (or diathesis-stress model) posits that adult violent behavior arises from the interaction between genetics and proximal social influences (e.g. family), with little impact from distal social influence, such as violent media (Ferguson et al., 2008; Ferguson & Dyck, 2012). In other words, the propensity for an individual to behave with violence or aggression is influenced by genetics and environmental stress. Ferguson and colleagues (2012) used data from the National Longitudinal Study of Adolescent Health to examine predictors of adult criminality. Participants were approximately 600 monozygotic and dizygotic twin, same-sex pairs, with data collected over 13 years. After controlling for heritability, it was found that male sex, a history of teen delinquency, lower intelligence, and a history of school problems all predicted later adult criminality. Media use was not associated with risk for adult criminality.

The General Aggression Model

The General Aggression Model (GAM; Anderson & Bushman, 2002) is a comprehensive theory that utilizes the socialization hypothesis to explain the link between violent media use and the development of aggression, including aggressive behaviors, cognitions and attitudes (Anderson & Dill, 2000; Anderson & Bushman, 2002; Barlett & Anderson, 2013; DeWall, Anderson & Bushman, 2011). The GAM is a developmental, biological, and social-cognitive model of aggression that is said to “delineate causal processes that link learned and situational variables to subsequent aggressive behavior (Anderson & Barlett, 2016, p.2).” The model draws heavily on previous social learning theories (e.g., Bandura, 1977; Crick & Dodge, 1994). The GAM can be viewed as a cyclical pattern of interactions between a person, their own individual factors, and the environment. The model poses that environmental events impact arousal, thoughts, and feelings, which leads to behavior change over time. The GAM theorizes the

process of forming complex thoughts and judgements in response to environmental stimuli can become automatic through repeated practice and exposure, hence the effect of violent media exposure on aggressive thoughts and behaviors.

Violent media usage is thought to impact level of arousal, aggressive thought content, and aggressive feelings, resulting in short-term or long-term changes in youth's aggressive behavior. Emphasized in the GAM is the cognitive route for influence on behavior, particularly through the activation of cognitive scripts that individuals use to guide and interpret behaviors. Cognitive scripts are often considered memory structures, or automatic thoughts, that evolve after multiple exposure to the same stimuli (e.g., violent media). It is argued that exposure to violent media activates and strengthens aggressive cognitive scripts, making it more likely an individual will interpret and respond to environmental stimuli with aggressive behavior (Anderson & Barlett, 2016). Several studies using the GAM model have found that exposure to media violence predicts subsequent aggression, even after controlling for prior levels of aggression (Anderson et al., 2008, Huesmann, Moise-Titus, Podolski, & Eron, 2003; Greitemeyer, 2014; Moller & Krahe, 2009; Willoughby, Adachi, & Good, 2012). In one study using the GAM framework, Gentile and colleagues (2011) used a longitudinal design to examine the influence of children's media usage (e.g. tv, video games and movies) on aggressive outcomes, including forms of physical and relational aggression (Gentile, Coyne & Walsh, 2011). After controlling for a set of theoretically relevant variables (e.g., gender, race, parental involvement, and earlier aggressive behavior), violent media exposure, a composite variable of violent media content and frequency of use, predicted later verbal and physical aggression as measured by peer nominations and teacher reports. The current study aimed to expand on these previously conducted longitudinal studies by examining bullying behaviors, rather than

aggressive behavior, specifically, and the relationship between child-reported violent media use and self-, peer-, and teacher-reported bullying behavior.

Violent Media Use and Aggressive Outcomes

Bullying

A wealth of research has examined the association between violent media use and aggressive outcomes. Few studies, however, have considered whether bullying behavior is influenced by exposure to violent media. Bullying is a specific form of aggression with different consequences and outcomes compared to those who engage in generally aggressive behavior only (Salmivalli & Neiminen, 2002). Bullying is defined as a repeated and deliberate act of peer aggression intended to harm a victim who is ill equipped to defend him/herself (Olweus, 1994; Salmivalli, 2010). In addition, bully-victim dyads are characterized by a distinct power-imbalance that favors the bully over the less powerful victim (Olweus, 1994). Despite the opinion of a subset of the public that engagement in, and succumbing to, bullying behaviors is a rite of passage for children (Arseneault, Bowes, & Shakoor, 2010), the majority of children are not bullies or victims of bullying. However, those involved in bullying are at significant risk for negative outcomes. Youth who are victims of bullying are prone to low levels of self-esteem, social withdrawal, poor school performance and attendance (Espelage & Swearer, 2003; Gazelle & Ladd, 2002; Storch & Ledley, 2005). Further, victims of peer bullying are more likely to exhibit mental health problems, including internalizing and externalizing behaviors, physical and psychosomatic complaints, and as adults are more likely to meet criteria for a psychiatric disorder such as depression, and show higher rates of suicidal behavior (Fekkes et al., 2006; Hawker & Boulton, 2000; Kumpulainen et al., 2001; Nishina et al., 2005; Olweus, 2013; Rigby & Slee, 1999). The perpetrators of bullying are also at significant risk. Research has documented

that crime rates are approximately four times higher for those who perpetrate bullying in adolescence compared to non-bullies (Olweus, 2011). Further, a recent meta-analysis of longitudinal studies found a link between school bullying and later aggressive and violent behavior such as criminal violence and violent offending (e.g., assault, forced sexual contact, robbery, rape) later in life, even after controlling for other major childhood risk factors (e.g., socioeconomic status; Ttofi, Farrington, & Lösel, 2012). Those who perpetrate bullying are also more likely to be diagnosed with depression later in life (Ttofi, Farrington, Lösel, & Loeber, 2011). Given the outcomes for both victims and perpetrators of bullying, identifying early risk factors for bullying behavior is crucial for the development of interventions to reduce those risk factors.

Violent Media Use and Bullying

Research studies examining the relation between violent media use and bullying behavior have produced mixed results. Dittrock and colleagues examined Canadian youth's (ages 10 – 17) preference for violent video games and their bullying behavior, using parent and child report on an online survey. Results suggested that children who prefer to play violent video games were more likely to concurrently engage in bullying behavior (Dittrock et al., 2013). In another study employing a short-term longitudinal design (i.e. two time-points, separated by six months) involving 417 sixth graders in Cyprus, Stavrinides and colleagues compared a model examining the bidirectional influence of bullying and violent media preference with a unidirectional model examining the effects of violent media exposure on later bullying behavior (Stavrinides, Tsivitanou, Nikiforou, Hawak, & Tsolia, 2013). Results suggest a bidirectional model of violent media exposure and bullying behavior fit the data better than a unidirectional model. Another study found no relationship between violent video game exposure and bullying behaviors in 7th

and 8th graders, but bullying behaviors were predicted by the child's trait aggression (Ferguson, Olson, Kutner & Warner, 2014). However, this study was conducted at a single time-point and only examined one form of violent media, violent video games. The current study aimed to expand on these previous studies by examining the longitudinal relationship between violent media use and bullying behavior based on multiple report sources (i.e. self, peer, and teacher).

Forms of Aggression

Researchers often distinguish between different forms of aggression, including overt and relational aggression. Overt aggression is defined as aggressive behavior that is intended to inflict harm on others through direct means, such as hostile verbalizations and physical violence (Crick, 1996). Much of the research to date has examined the relationship between violent media use and overt aggression (e.g., Anderson et al., 2008; Greitemeyer, 2014; Willoughby, Adachi, & Good, 2012). Relational aggression is defined as aggressive behavior that damages or threatens to damage feelings of inclusion, acceptance or overall relationships (Crick, 1996), and is more common in females, whereas physical forms of aggression are more common in males (Archer & Coyne, 2005; Wang, Iannotti & Nansel, 2009). To the author's knowledge, only three published studies have examined the prospective relationship between violent media use and relational aggression. Huesmann and colleagues, using a prospective, longitudinal design, found that viewing violent television during first and third grade predicted later adult relational aggression for women, as well as later physical aggression for both men and women (2003). In another study, the subjective ratings of media exposure (subjective violence ratings multiplied by frequency of watching/playing) were positively related to an observational measure of relational aggression in a sample of high-functioning and high SES preschool girls (Ostrov, Gentile & Crick, 2006). Finally, Gentile and colleagues examined the relationship between exposure to

violent media in preschool (across TV, movies and video games) and later physical, verbal, and relational aggression (Gentile, Coyne, & Walsh, 2011). Children's violent media use early in the school year predicted later aggressive behavior, and these effects were mediated by hostile attribution bias. Further, the link between violent media use and physical aggression was stronger than the relationship between violent media use and verbal/relational aggression. While Gentile and colleagues also considered several control variables (e.g., sex, parental monitoring, previous levels of aggression), they failed to account for ethnicity and socioeconomic status (e.g., annual income, reduced lunches at school as a proxy for socioeconomic status). The current investigation expanded on these studies by examining relational and overt forms of bullying, while controlling for several theoretically-relevant demographic variables, in a sample of elementary students based on peer-, self- and teacher-report data.

Moderating Conditions

As previously reviewed, while several studies showed a relationship between violent media use and aggression, others failed to find this association. It is argued by some that a third variable (i.e., demographic and parenting factors, prior levels of aggression) may create conditions that enhance or diminish the effect of violent media use on aggressive behavior (Ferguson, Olson, Kutner & Warner, 2014). The majority of the research has considered gender, age, and culture (eastern vs. western) as potential moderators of the relation between violent media use and aggressive behaviors (for a review see Anderson et al., 2010). The current study aimed to expand on previous research by examining whether the strength of the relation between violent media use and bullying behavior is influenced by demographic variables, gender, parental monitoring, and emotional regulation abilities.

Gender

Researchers have considered whether the effect of violent media exposure on aggressive behavior is conditional on gender. Although there is a consensus in the literature that males tend to play more violent video games and engage in more physically aggressive behaviors than females (Anderson et al., 2010; Lucas & Sherry, 2004), results from studies examining whether gender moderates the relation between violent media exposure and aggression vary. Some studies have found females to be less susceptible than males to the influence of media violence (Eron, Huesmann, Lefkowitz, Walder, 1972). Others have found large effects for both genders (Anderson, Gentile, Buckley, 2007). Indeed, a recent meta-analysis including both adults and children found no evidence that the effect of violent video game exposure on aggression differed between males and females (Anderson et al., 2010). Further, a short-term longitudinal study in elementary school children also found no gender-differences in the relationship between media violence exposure and subsequent aggressive behavior (Gentile et al., 2011). In light of these mixed results and evidence suggesting gender difference in the prevalence of overt (i.e., physical) and relational bullying (Crick & Nelson, 2002), this study considered whether the prospective relation between violent media use and bullying differs for boys and girls.

Parental media monitoring

Parental media monitoring, such as co-viewing, active discussion about media, and limit setting on amount of violent media and content, is related to children's media usage and aggressive outcomes (Ostrov, Gentile & Crick, 2006). In a study examining media environment in Portuguese families with children ages 7-10, parent screen-viewing time was significantly associated with children's tv-viewing time (Jago et al., 2012). Further, research using an experimental paradigm found when parents become desensitized to violence in media they tend

to reduce the age at which they approve of children's exposure to violent media (Romer et al., 2014). There is also evidence that parental monitoring of children's media use is negatively associated with children's levels of aggression (Ostrov, Gentile & Crick, 2006). Further, research has found the relationship between aggression and later delinquency-related violence varies as a function of overall parental monitoring, with high levels of parental monitoring acting as a protective factor (Brendge, Vitaro, Tremblay & Lavoie, 2001). It is possible that the relation between violent media use and children's aggressive behavior varies depending on the degree to which parent's monitor children's media use. Parents who are more involved in their child's media use may be more likely to restrict violent content and media time or are more likely to co-view content with their children. In line with the GAM, restriction of violent content or media time would decrease the chances of developing automatic aggressive scripts. Also, co-viewing, with subsequent discussions about the differences between media content and real life, or how the violence portrayed in media content is harmful or inappropriate, could alter a child's appraisal of aggressive content and possibly decrease the activation of aggressive scripts and behaviors.

Emotion Regulation

Studies examining anger regulation and aggression have found considerable links between the two (Cornell, Peterson & Richards, 1999; Doyle & Dolan, 2006; Eckhardt, Jamison & Watts 2002; Norstrom & Pape, 2010). There is clear evidence that emotional dysregulation (i.e., maladaptive emotion regulation) is associated with aggressive behavior. This relationship has been found in adults who perpetrate intimate partner violence (Tager, Good & Brammer, 2010), in adolescents who have increased rates of physical and relational aggression (Sullivan, Helms, Kliewer & Goodman, 2010), and in a male population in experimental studies that

measured aggression through a shock-giving paradigm (Cohn, Jakupcak, Seibert, Hildebrandt & Zeichner, 2010). A review conducted by Robertson and colleagues (2012) examines how emotional regulation can lead to aggressive behaviors using the GAM framework. Evidence from this review suggests under-regulation and over-regulation of emotions can result in aggressive behaviors (for a review see, Robertson, Daffern & Bucks, 2012). A recent review of longitudinal studies in children has suggested a relationship between emotion regulation and aggressive behaviors, and concludes that emotional dysregulation is a significant risk for later aggression in youth (Röll, Koglin, Petermann, 2012).

Examining the potential role of emotion regulation in the association between media violence and aggressive behavior is essential, given that youth who have difficulty regulating emotions may be more likely to enact aggressive or violent behaviors they are exposed to in the media. Indeed, there is evidence that children who struggle to regulate their emotions have difficulties with control of aggressive behaviors and impulses (Tremblay, 2000). Since children with difficulties in emotional regulation are at risk for aggression, the current study aims to examine if emotional regulation moderates the relationship between media violence usage and bullying behaviors. The GAM suggests that environmental events impact arousal, which can influence cognition and behavior. Therefore, individuals low on emotional-regulation may experience heightened arousal in response to viewing violent media and have subsequent difficulty inhibiting the tendency to respond to environmental stimuli with aggression.

The Present Study

The present study expanded on previous research examining the relation between violent media exposure and bullying behavior by using a longitudinal design, assessing bullying through multiple report sources, and considering theoretically relevant moderators in a sample of

elementary school children. Examined first was mean level differences in the violent media exposure and the frequency of overt and relational bullying for elementary school boys and girls. Considering previous research, it was hypothesized (1) that the violent media exposure and the frequency of overt bullying will be higher for boys than for girls, and the frequency of relational bullying will be higher for girls (Archer & Coyne, 2005; Gentile et al., 2010; Wang, Iannotti & Nansel, 2009). The second aim of the current investigation was to examine whether violent media exposure was a prospective predictor of children's level of overt and relational bullying. Consistent with findings from past research, hypothesis 2 predicted that violent media exposure would emerge as a positive predictor of overt and relational bullying (Dittrick et al., 2013; Stavrinides, Tsivitanou, Nikiforou, Hawak, Tsolia, 2013). The third aim was to examine whether the relation between violent media exposure and bullying varied as a function of gender. Hypothesis 3 predicted the relation between violent media exposure and overt bullying would be stronger for boys than girls whereas the relation between violent media exposure and relational bullying would be stronger for girls than boys (Huesmann et al., 2003). Fourth, the current study investigated whether the prospective relation between violent media exposure and overt and relational bullying was conditional on the parents monitoring of media, and children's emotional regulation measured at time 1. Hypothesis 4 predicted that the relation between violent media exposure and overt and relational bullying was stronger when parental monitoring or emotion regulation ability was low. Finally, the current study examined the extent to which the 2-way interactions described in the fourth study aim was conditional on gender. Considering mixed findings in areas of gender and aggression, and the moderating variables of interest, the final aim of the current study included an exploratory analyses that examined whether the interaction

between violent media exposure and emotion regulation or violent media exposure and parental monitoring varied as a function of gender.

Chapter 2: Method

Participants

Participants were children recruited from seven elementary schools located in the Southeastern United States. Schools were selected to represent the ethnic and socioeconomic diversity of the area. Approximately 51% of parents ($n = 483$) consented to allow their child to participate in the classroom assessment, with 49% of parents either declining consent ($n = 101$) or failing to return the consent form. The majority of children (93%; $n = 451$) assented to participate in the study. Participants were 41.7% male and 57.4% female, in the 3rd (43.9%) or 4th (56.1%) grade. The average age of the children was 9.16 ($SD = .63$) years old. The majority were Caucasian (66.5%) or African American (9.3%), with other racial and ethnic groups comprising 18.1% of the sample. Overall, 29.3% of households reported an annual income of less than 25,000 per year, 19.6% reported an income between 25,000 and 50,000 per year, 16.4% reported an income between 50,000 – \$100,000, and 22% reported an annual household income greater than \$100,000 per year.

Procedures

Data were collected as part of a larger project examining the correlates of peer conflict and bullying. The University Institutional Review Board approved the project prior to data collection. An informational parental consent form and demographic form were sent home to parents, and written parental consent and children assent were obtained for all study participants prior to participation. Data from children and teachers were collected at two time points in a single academic year. Children completed assessment materials (Appendix A) in early fall of 2015 (September/October; T1) and late spring of 2016 (May; T2). Children completed self- and peer-report measures in class groups overseen by trained research assistants. Students were

presented with survey packets, asked to answer questions honestly, and items were read aloud by a trained research staff. For the peer nomination procedure, children used a numerical roster and classmates were nominated by circling the number corresponding to their name. To minimize discussion about ratings, children were spaced apart, instructed to keep answers covered, and allowed to work on distracter activities (e.g., mazes) between sets of questions and for approximately 5 minutes after the completion of all questionnaires.

Measures

Demographics. An eight-item questionnaire was administered that asked parents to report on children's age, sex, ethnicity, family income, and other variables. The demographics questionnaire is a brief measure created by the current researchers to assess sample demographic information (e.g., age, ethnicity, gender, family income).

Violent Media Exposure. Similar to procedures used by Gentile and Gentile (2008), and Gentile and colleagues (2004), violent media exposure was measured by asking participants to name their three favorite video games, television shows, and movies. Participants rated how often they watch or play the media on a 5-point Likert scale (5 = almost every day, 1 = I almost never watch this show).

Each video game was also coded by trained research assistants for its content rating based on the Entertainment Software Rating Board (ESBR) ratings (1 = Early Childhood, to 6 = Adults Only), and each movie based on the Motion Picture Association of America's film rating system (1 = General Audience, to 5 = No Children under 17). TV shows were coded for their most recent season average rating based on the TV Parental Guidelines (TV-Y = 1, to TV-MA = 6). Coders also coded for instances when participants answers did not fit the category (i.e., answer included wrong content, such as a video streaming service, e.g. Netflix, or TV network, e.g.,

Disney Channel; TV = 7.4%, video games = 2.3%, movies = 2.2%), included a youtube video (TV = .2%, video games = 3.3%, movies = 3.1%), were not able to be found online (TV = 2.8% video games = 3.6%, movies = 1.7%), or handwriting was illegible (TV = .53%, video games = .93%, movies = 1.7%); these instances were treated as missing data in subsequent analyses. After reviewing discrepancies for issues with the transcription of children's handwritten answers, inter-rater reliability was tested for all coded ratings of video games, TV and movies using Cohen's Kappa, (K), $K = \frac{\text{Pr}(a) - \text{Pr}(e)}{1 - \text{Pr}(e)}$, where $\text{Pr}(a)$ is observed percentage of agreement, and $\text{Pr}(e)$ is expected percentage of agreement. Kappa has a range from 0 – 1.00, with larger values indicating greater reliability. Inter-rater reliability was above satisfactory (i.e., $K = .70$), with raters ranged from .94 to .97 for all media products.

Like Gentile and colleagues (2004), a weighted video game violence exposure variable was computed for each participant by multiplying the frequency of play for each game by its violence rating, averaging the three products together, and then standardizing across all participants. These procedures were then completed for the three favorite TV shows and movies listed by each participant. The violent media exposure score was then calculated by averaging across the three standardized aggregate variables for each media platform and again standardizing the computed violent media exposure variable. These procedures have shown adequate reliability in previous research ($\alpha = .86$; Anderson & Dill, 2000), and presented sufficient reliability in the current study ($\alpha = .75$).

Parental Media Monitoring. The Adult Involvement in Media Scale (AIM; Anderson et al., 2007; Gentile et al., 2004; Gentile et al., 2012), was used to assess child's perception of parental monitoring of children's TV and video game habits. The AIM measures four aspects of parental monitoring, including co-viewing, limit-setting on amount, limit-setting on content, and

active discussion about media. Items are rated on a 5-point Likert scale (1 = “never”, 5 = “always”, with a “don't know” option). Items where participants responded “don't know” were treated as missing data. Items were averaged to form a composite measure of parental monitoring. The scale has shown adequate reliability in previous research ($\alpha = .85$; Gentile et al., 2012). Reliability analyses suggest adequate internal consistency of this measure in the current sample ($\alpha = .73$).

Self-Reported Bullying. A modified version of the University of Illinois Bully Scale (IBS; (Espelage & Holt, 2001) was used to assess self-reported bullying behavior. The modified version included items to assess relational victimization. This 18-item scale measures bullying behaviors such as teasing, name-calling, social exclusion and rumor spreading. Students are asked how often in the last 30 days they engaged in each behavior (e.g., I upset other students for the fun of it), and respond on 5-point scale. Response range from “never,” to “7 or more times.” Higher scores indicate more bullying behavior. The reliability and validity of the measure is well documented, including construct validity and convergent validity with a youth self-report aggression scale (Espelage & Holt, 2001). Relational bullying was calculated by averaging items 19 and 22 (See Appendix A; i.e., I spread rumors about other students) and displayed sufficient reliability in the current sample, ($\alpha = .98$). Overt bullying was calculated by averaging items 1, 2, 12, 13 ,18, 20 and 21 (i.e., I upset someone for the fun of it), and again displayed adequate reliability in the current sample ($\alpha = .73$).

Teacher-Reported Bullying. To assess teacher-reported bullying, a modified, parallel version of The University of Illinois Bully Scale was utilized (IBS; Espelage & Holt, 2001). This ten-item scale measures bullying behaviors such as teasing, name-calling, social exclusion and rumor spreading. Teachers were asked how often in the last 30 days they witnessed students

engaged in each behavior (e.g., This student upset other students for the fun of it), with the response range from “never,” to “7 or more times.”. Higher scores indicate more bullying behaviors. The reliability and validity of the child-version of the self-report measure is well documented, including construct validity and convergent validity (Espelage & Holt, 2001). Relational bullying was calculated from averaging items 2, 3, and 4 (See Appendix A; i.e., This student spreads rumors about other students) and displayed sufficient reliability in the current sample ($\alpha = .92$). Overt bullying was calculated by averaging items 1, 5 and 6 (i.e., This student threatens to hit or punch other students) and displayed good reliability in the current sample ($\alpha = .99$).

Peer Nominations. A peer nomination inventory, similar to procedures outlined by Coie, Dodge, and Coppotelli (1982), was used to assess children’s bullying behavior (Coie, Dodge, & Coppotelli, 1982). Bullying behavior was assessed via two peer nomination items measuring overt (i.e., “Who in your class hits, pushes, threatens, or teases other children?”) and relational (i.e., “Who in your class gossips about or leaves others out of activities?”) bullying. Student’s nominations were tallied for each item. Scores on overt and relational bullying were standardized within classroom.

Emotion Regulation. Emotion regulation was measured using the Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA; MacDermott, Gullone, Allen, King & Tonge, 2010). The ERQ-CA is a 10-item self-report measure that assess emotion regulation strategies, including reappraisal (e.g., “When I want to feel happier about something, I change the way I’m thinking about it”), and suppression (e.g., “I control my feelings by not showing them”). Items are rated on a five-point scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating greater use of emotion regulation strategies. Research has demonstrated

the measure has strong psychometric properties, including test-retest reliability ($r = .54$, reappraisal; $r = .59$, suppression; MacDermott, Gullone, Allen, King & Tonge, 2010), as well as internal consistency, construct and convergent validity (Gullone & Taffe, 2012). The internal consistency of the subscale reappraisal ($\alpha = .97$) and suppression ($\alpha = .99$) was high in the current sample.

Analytic Method

Descriptive statistics and t-tests to examine gender differences in violent media exposure and bullying (i.e. hypothesis 1) were estimated in SPSS version 24. Correlations among primary study variables and regression models were estimated in Mplus 7.2. Regression models were estimated using TYPE = COMPLEX and took into account the hierarchical nature of the data (students were nested within classroom) using the CLUSTER option in Mplus. The estimator for all regression models was maximum likelihood estimation with robust standard errors (MLR). For each hypothesis, a separate regression model was estimated for each report source for bullying (i.e., child report; peer report; teacher report). Each regression model simultaneously regressed overt and relational bullying on violent media exposure and a set of control variables. Control variables were ethnicity (dummy code 1 = White), age, gender (dummy code 1 = male), reduced lunch at school (dummy code 1 = yes), family income, and bully score at T1. To address Hypothesis 2 through 4, six sets of regressions were estimated per hypothesis; each regression was run separately per type of bullying behavior (i.e., overt and relational bullying), and for report source (i.e., peer-report, self-report, and child-report). The first of regression hypothesis regressed bullying behavior (overt and relational bullying) on T1 bullying behavior and exposure to violent media. Similar to the first set of regressions, the second set regressed bullying behavior onto T1 bullying behavior, violent media exposure, and an interaction term between gender and

violent media exposure. The third set of regressions regressed bullying behavior onto T1 bullying behavior, violent media exposure, and moderating variables (i.e., parental monitoring and emotional regulation abilities). The fourth set of regression models regressed bullying behavior onto T1 bullying behavior, violent media exposure, and interaction terms between violent media exposure, gender and the moderating variables. For regression models including interaction terms, first order predictors were mean centered prior to computing the interaction term to reduced multicollinearity between the predictors and the interaction term. For each hypothesis, mean centered predictors and interaction terms were simultaneously added to the model. Model fit was evaluated using criteria recommended by Hu and Bentler (1999): CFI \geq .95, RMSEA \leq .06, and SRMR \leq .08.

Treatment of Missing Data

Analyses were based on a sample of 451 children for whom data was available for at least one measurement occasion to minimize bias associated with case-wise deletion. For missing data at the item level, subject-wise mean substitution was utilized in the creation of aggregate variables by averaging items with at least 60% of items present. Little's (1995) MCAR analysis was utilized to determine that nature of the missing data at the participant level. Little's MCAR test revealed that data was not missing completely at random ($\chi^2 = 3450.183$, $df = 3450.183$, $p = .008$). To further examine the process of the missing at random (MAR) and missing not at random (MNAR) data, dummy variables were created for all predictor variables via procedures outlined by Schlomer & Bauman (2010). Bivariate-correlation analyses were conducted in SPSS to examine the relationship between missing data and the current study variables. The dummy coded predictor variables were associated with multiple study variables, including annual income, ethnicity, adult involvement in child media use, and self-reported and peer-reported

overt bullying at T1. Multiple imputation (MI) was used to address missing data at the participant level using the Markov Chain Monte Carlo (MCMC) method (Schafer & Graham, 2002). Missing data was assumed to be a missing at random process (MAR) once variables associated with missing data were included in the imputation model. Final models were estimated on 100 imputed data sets.

Chapter 3: Results

Preliminary Analyses

Table 1 presents mean scores for observed predictor and outcome variables. Correlations among primary study variables are presented in Table 2. Correlations across different informants (i.e., peer, teacher, and self-report) of overt bullying ranged from .18 ($p < .05$) to .35 ($p < .05$) at Time 1 (T1) and from .27 ($p < .05$) to .43 ($p < .05$) at Time 2 (T2), and relational bullying ranged from .00 ($p < .05$) to .24 ($p < .05$) at T1 and from .13 ($p < .05$) to .34 ($p < .05$) at T2. Self-reported relational and overt bullying at T1 was significantly correlated with T2 relational ($r = .37, p < .05$) and overt bullying ($r = .50, p < .01$), respectively. Peer-reported relational and overt bullying at T1 was significantly correlated with T2 relational ($r = .57, p < .05$) and overt bullying ($r = .53, p < .01$), respectively. Teacher-reported relational and overt bullying at T2 were significantly correlated with T2 relational ($r = .52, p < .01$) and overt bullying ($r = .69, p < .01$), respectively. Overall, analyses suggest stability in the three report sources for both overt and relational bullying from T1 to T2.

Primary Analyses

Hypothesis 1. To test Hypothesis 1, that violent media exposure and the frequency of overt bullying will be higher for girls than for boys, a series of *t*-tests were conducted in SPSS version 24. Results are presented in Table 3. As predicted, exposure to violent media was higher for boys than for girls. There were no significant gender differences in self- and teacher-reported relational and overt bullying at T1 or T2. Mean levels of peer-reported overt and relational bullying did not differ for boys and girls at T1; however, there were significant differences at T2, with boys scoring higher on relational and overt bullying.

Hypothesis 2. To test Hypothesis 2, that violent media exposure will emerge as a positive predictor of overt and relational bullying, a series six regression models were estimated for each report source for both overt and relational bullying (i.e., child-report, peer-report, teacher-report; Tables 4 and 5, respectively). Overt and relational bullying at T1 emerged as a significant predictor of overt and relational bullying at T2 for each report source. Gender emerged as a significant predictor of peer-reported overt and relational bullying, with boys scoring higher on bullying at T2. Violent media exposure emerged as a significant negative predictor for self-reported overt bullying ($\beta = -.16, p < .05$), such that children scoring higher on violent media exposure at time 1 were less likely to self-report engaging in overt bullying.

Hypothesis 3. Hypothesis 3 predicted that the relation between violent media exposure and overt bullying will be stronger for boys than girls whereas the relation between violent media exposure and relational bullying will be stronger for girls than boys. A series of six separate regression models were estimated to examine if the relation between violent media exposure and child-, peer-, or teacher-reported overt and relational bullying varied as a function of gender (Tables 6 and 7, respectively). Annual income was a significant negative predictor of self-reported overt bullying at T2, such that children from lower income families were more likely to engage in overt bullying. Age emerged as a significant predictor of teacher-reported overt and relational bullying at T2, with younger children scoring higher on teacher-reported overt and relational bullying than older children. Overt and relational bullying at T1 emerged as a significant predictor of overt and relational bullying scores at T2 for each report source. Gender emerged as a significant predictor of self- and peer-reported overt and relational bullying, with boys scoring higher on bullying at T2. Violent media exposure emerged as a significant negative predictor for self-reported relational bullying ($\beta = -.19, p < .05$). The interaction between violent

media exposure and gender did not emerge as a significant predictor of overt or relational bullying across report sources.

Hypothesis 4. As proposed in Hypothesis 4, that the relation between the violent media exposure and overt and relational bullying would be stronger when parental monitoring or emotion regulation ability are low, a series of six separate regression models were estimated to examine if the relation between violent media exposure and child-, peer-, or teacher-reported overt and relational bullying was conditional on parental monitoring and children's emotion regulation ability (Tables 8 and 9). Age emerged as a significant predictor for teacher-reported overt and relational bullying at T2, with younger children more likely to be reported as engaging in bullying. Gender emerged as a statistical trend for self- and peer-reported overt and relational bullying; boys were more likely to engage in bullying at T2 than girls. Annual income at T1 was a significant predictor of self-reported overt bullying at time 2—children from families with lower income were more likely to engage in bullying at T2. Reduced lunch at T1 also emerged as a significant positive predictor of teacher-reported relational bullying at time 2—children on reduced lunch scored higher on teacher-reported relational bullying. Violent media exposure emerged as a significant negative predictor of self-reported overt bullying ($\beta = -.13, p < .05$) and relational bullying ($\beta = -.25, p < .01$). Consistent with our prior models, overt and relational bullying at T1 emerged as a significant predictor of overt and relational bullying scores at T2, for each report source. The interaction between violent media exposure and parental monitoring and violent media exposure and emotional regulation did not emerge as a significant predictor of overt and relational bullying for any report source.

Hypothesis 5. A series of six separate regression models were estimated to examine if the two-way interactions described in Study Aim 4 were conditional on gender. Gender emerged

as a significant predictor for self- and peer-reported overt and relational bullying, with boys more likely to engage in bullying than girls. Annual income was a significant positive predictor of self-reported overt bullying—children from families with lower annual income were more likely to engage in bullying. Reduced lunch emerged as a significant positive predictor of teacher-reported relational bullying, such that children on reduced lunch scored higher on relational bullying. Overt and relational bullying at T1 emerged as a significant predictor of overt and relational bullying scores at T2 for each report source. Violent media exposure emerged as a significant negative predictor of self-reported overt-bullying ($\beta = -.13, p < .05$) and relational-bullying ($\beta = -.24, p < .01$). Three-way interactions effects did not emerge as significant predictors of bullying for any report source.

Chapter 4: Discussion

The current study examined the relation between violent media exposure and bullying behavior. Previous studies examining the links between violent media exposure and aggression have found mixed results, with some studies finding links between violent media use and bullying (Bushman & Anderson, 2016) and others finding small or no effects (Ferguson et al., 2014). Research guided by the General Aggression Model has documented the general relationship between various types of violence exposure and later aggressive behavior (Anderson & Bushman, 2002; Barlett & Anderson, 2013). Consistent with the GAM, it was hypothesized that violent media exposure would emerge as a positive prospective predictor of bullying behavior. Also examined in the current study was the extent to which the relation between violent media exposure and bullying was moderated by a set of theoretically-relevant variables, while controlling for socioeconomic status, previous bullying behaviors, ethnicity, and gender. It was reasoned that factors such as parental monitoring and children's emotional regulation ability might impact the extent to which exposure to violent media influences the development of bullying behavior.

Consistent with prior research (Camodeca, Gossens, Terwogt, & Schuengel, 2002; Schäfer, Korn, Brodbeck, Wolke & Schulz, 2005), results from the current investigation suggest that bullying behavior is relatively stable across a single academic year. Results provided partial support for Hypothesis 1. Exposure to violent media (i.e. an aggregate of violent media exposure across all media platforms) was higher for boys than for girls. Contrary to Hypothesis 1, the level of self-reported and teacher-reported overt or relational bullying during the fall (i.e., Time 1) and the spring (i.e., Time 2) did not vary by gender. There was some evidence that peer-reported overt and relational bullying was higher for boys, but this effect was only found in the

spring assessment. Overall, findings suggest that boys and girls are engaging in similar levels of overt and relational bullying.

The current study provided no support for the notion that violent media exposure was a unique positive predictor of bullying behavior (i.e. Hypothesis 2), or that the relation between violent media exposure and bullying was moderated by gender (i.e. Hypothesis 3). In addition, despite previous research documenting the buffering role of parental monitoring on the relation between violent media exposure and later aggressive behavior (Ostrov, Gentile & Crick, 2006; Gentile et al., 2011), the current investigation provided no evidence that the relation between violent media exposure and bullying was conditional on parental monitoring (i.e. Hypothesis 4). It is important to note that in one previous study documenting the protective role of parental monitoring, the participants came from a predominately high SES background - it is possible that the protective role of parental monitoring may not extend to children from SES backgrounds with less advantage. Regarding emotional regulation, this was the first study to examine whether the relation between violent media exposure and bullying was moderated by emotion regulation. It was reasoned that children who have difficulty regulating their emotions might have a particularly hard time inhibiting their desire to behave aggressively (Tremblay, 2000) in the face of violent content. However, results from the current investigation did not support this contention.

Violent Media Exposure and Bullying Behaviors

Contrary to expectations, and perhaps most surprising, was the finding that violent media exposure in the fall was associated with lower levels of self-reported overt and relational bullying in the spring of the same academic year. Yet, these findings are in line with some previous research examining the effects of violent video game exposure on aggressive behaviors.

One study using an experimental design found that participants high on violent video game exposure had a significantly reduced state hostility after a stressful task (Ferguson & Rueda, 2010). Further, another study found that use of violent role-playing games was negatively related to aggression (Puri & Pugliese, 2012). It is important to note, however, in the current study that violent media exposure explained only 18% of additional variance in self-reported bullying, over and above prior levels of self-reported bullying and control variables.

Despite some evidence supporting reductions in aggression following exposure to violent content, results from the current investigation diverge from a body of research that has found a positive relationship between violent media exposure and aggressive behavior (see Bushman & Anderson, 2015, for a review), and other studies that, when considering demographic and theoretically-related variables, found little-to-no impact of violent media exposure on aggressive outcomes (Ferguson et al., 2009; Ferguson et al., 2014; Ferguson, Miguel, & Hartley, 2015). One interpretation of the negative effect of violent media exposure on bullying is that exposure to violent media may change children's normative beliefs about what constitutes aggressive behavior. It is possible that when children are repeatedly exposed to violent media they are less likely to report more subtle forms of aggression as bullying (Anderson & Barlett, 2016). This could explain why the effect was found only for self-reported bullying and not for peer- or teacher-reported bullying. Another possible explanation is in the current study's inclusion of multiple demographic control variables, including socioeconomic status. The majority of the studies finding a positive effect of violent media exposure on bullying behaviors have failed to take into account such control variables.

Although the GAM was used to generate hypotheses in the current investigation, the Catalyst model (Ferguson et al., 2008; Ferguson & Dyck, 2012) could provide a useful

framework for understanding findings from the current study. According to the catalyst model, aggressive behavior arises from the interaction between an individual's biology and their immediate social environment. It focuses more on "innate motivations, biological dispositions and other more fundamental environmental factors such as peer and family influences (Elson & Ferguson, 2014, p. 35)". In this theory, violent video media serves as a distal social influence, and the most significant predictors of aggression come from proximal social influences such as deviant peer relations (Ferguson, 2010) or problematic parenting or parent-child relationships (Ferguson, San Miguel, Garza & Jerabeck, 2012). Consistent with the Catalyst model, children in the current sample on reduced lunch or from households with lower annual income were more likely to engage in teacher-reported relational bullying and self-reported relational and overt bullying, respectively. Socioeconomic status could be viewed as a marker for children who are likely to experience higher levels of adversity at home and at school (i.e. a proximal influence), which places children at risk for aggression (Ferguson, San Miguel, Garza & Jerabeck, 2012). We found no evidence that violent media exposure was associated with bullying.

Recently, authors and proponents of the GAM have moved toward a risk and resiliency framework (Prot, Anderson, Saleem, Groves, & Allen, 2016), that more fully accounts for proximal influences, not dissimilar to components of the Catalyst model. This shift toward risk and resilience allows for a broader examination of the multiple, complex, and interrelated risk factors for the development of aggressive behavior (Anderson, Gentile & Buckley, 2007; Prot, Anderson, Saleem, Groves, & Allen, 2016). In particular, this framework allows for inclusion of the context in which the media is consumed (e.g., protective factors such as prosocial peers and prosocial media use), as well as factors such as genetic predisposition, aggressive personality

traits, and immediate environmental influences, areas that were largely missing from focus in GAM.

Methodological Considerations

It is also possible that methodological differences may also explain the discrepancy between findings from the current investigation and some past research. A significant difference between the current study and several otherwise methodologically similar studies is the examination of exposure to violent media versus assessing for violent media preference. Violence preference is understood as an active choosing of violent media (as opposed to objective reports of media use in the current study), and is unable to disentangle a socialization effect from a selection effect. Researchers examining an older, wider age range of Canadian youth (10 – 17 years) found that preference for mature and violent video games was positively related to children's perpetration of bullying (Dittrick et al., 2013). Further, a six month, two time-point longitudinal study with sixth grade students in Cyprus revealed a bidirectional relationship between preference for violent television and bullying behavior (Stavrinides, Tsivitanou, Nikiforou, Hawak, & Tsolia, 2013). Findings from this study suggest a reciprocal relation between violent television preference and bullying behavior, rather than a direct casual sequence of events (e.g., unidirectional model). It is also important to note that neither study included multiple forms of media violence, or controlled for other possible influences on bullying behavior (e.g. demographic variables; parental or child characteristics).

Even in previous studies using a similar design to the current study, the significant effects of violent media exposure on aggression tends to be small. Similar to the current investigation, Gentile and colleagues (2011) utilized a short-term longitudinal study with 3rd and 4th grade students to examine if hostile attribution bias mediated the relationship between violent media

exposure and aggression. Gentile and colleagues (2011) examined aggressive behavior more broadly, as opposed to bullying in the current study. Aggressive behavior was assessed by using a peer nomination procedure and teacher report; media habits and hostile attribution bias were collected through self-report questionnaires. Overall, they found a significant, positive impact of exposure to violent media on later overt (verbal and physical), and relational aggression. Similar to the current study, the biggest predictor of aggression at the second time-point was level of aggression at time-point one (β range from .64 to .75), with violent media exposure predicting only a small percentage of the variance (β range from .12 to .18) in aggression. Further, while this study controlled for several demographic variables, including age, sex and ethnicity, they did not consider socioeconomic status which was a significant predictor of bullying behaviors in the current study.

Similar to the current investigation, another study measured exposure to video game violence with objective, ESRB ratings, as opposed to child-report of violence in the media they consume (Ferguson, Olson, Kutner & Warner, 2014). In a sample of 7th and 8th grade students, Ferguson and colleagues found that trait aggression and stress levels were the best predictor of bullying behavior, even when including violent media exposure and parental involvement as predictors in their model (Ferguson, Olson, Kutner & Warner, 2014). In addition, although gender (boys), scoring high on trait aggression, and interest in catharsis seeking were associated with greater preference for violent video games, violent video game preference was not associated with bullying behavior. In line with the current investigation, child and family characteristics (e.g., previous levels of bullying, family income, gender) were stronger predictors of bullying than exposure to violent media.

In summary, despite some methodological differences, the current study is in partial accord with previous research examining the relationship between violent media exposure and aggression. Regardless of the level of significance, violent media exposure tends to account for only a small percentage of the variance associated with aggressive behavior. Indeed, earlier levels of aggression is often the biggest predictor of later aggressive behaviors. Further, when examined, child and family characteristics tend to be strong predictors of aggression across studies.

Clinical Implications

Although violent media exposure was not a significant positive predictor of bullying at T2, there are several important clinical implications that are worth discussing. First, it is clear from the current study that information on child aggression should be collected from multiple report sources. It was found that violent media exposure was a significant negative predictor of self-reported bullying, but not teacher- or peer-reported bullying. Researchers who rely on only a single report source for bullying behavior may only gain a partial appreciation for how other measured constructs relate to bullying. Findings from the current study also hint at the possibility that youth may become desensitized to aggression or violence through repeated exposure, affecting their ability to accurately report on their own level of aggression. Thus, psychoeducation on what constitutes bullying, including subtle aggressive behaviors, could be an important component of a bullying intervention.

Limitations and Future Directions

There are several strengths to the current investigation. Data on bullying behavior was collected at multiple time points, which allowed for the longitudinal examination of the link between violent media exposure and bullying behavior. In addition, multiple forms of bullying

behaviors were assessed using multiple informants, which allowed for a more comprehensive examination of the relation between violent media exposure and bullying behavior.

Theoretically-relevant moderating variables were also included in regression models to understand the conditions or contexts in which violent media exposure was related to bullying behavior. Future studies will want to include potential confounding variables, including demographic variables which were found to have a significant effect on aggressive behaviors in the current study. There are also several limitations that are worth noting. First, it is possible that the effect of violent media exposure on bullying behavior was not captured due to the relatively short length of time between assessment occasions. Further, while the current study utilized multiple-informants (self-, peer- and teacher-report), we were unable to gain parental reports. Future researchers will be wise to collect information on family environmental variables (i.e., parenting practices, family media habits) to gain a more comprehensive picture of environmental influences interact to influence aggressive behavior. The current study was limited in the age range (only 3rd and 4th graders), future studies will want to expand age ranges such as younger children. The current study also utilized a measure for assessing violent video game exposure that has been commonly used in the field. Yet, this measure may fail to take in to account the difference between age inappropriate versus age-appropriate violent exposure. Further, since the current study utilized objective ratings (i.e., ESRB ratings), higher scores may be including more than violent exposure, but exposure to other adult content as well (e.g., drug use, sexual situations, profane language).

There remains significant debate in the literature around how, and to what extent, violent media is linked to aggressive behavior. It is possible that children's behavior is influence most by violent media exposure during particular developmental windows. To date, researchers have

examined the impact of violent media on aggression in samples of youth ranging from 3 grade through high school. It is possible that violent media exposure may have a stronger impact on the development of aggression in younger children, when viewing violent media is less normative and peer groups have smaller influence. Overall, the current study found no evidence that violent media exposure led to greater bullying behavior when accounting for child characteristics and previous levels of aggression. Still, it is important to continue to examine how child, peer, and family characteristics, as well as developmental period, may influence the relation between violent media exposure and bullying.

List of References

- Anderson, C. A., & Barlett, C. P. (2016). The General Aggression Model. In H. Miller (Ed.) *Encyclopedia of Theory in Psychology*. Thousand Oaks: Sage.
- Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, *12*(5), 353-359. DOI: 10.1111/1467-9280.00366
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Psychology*, *53*(1), 27. DOI: 10.1146/annurev.psych.53.100901.135231
- Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology*, *78*(4), 772. <http://dx.doi.org/10.1037/0022-3514.78.4.772>
- Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy*. Oxford University Press.
- Anderson, C. A., Sakamoto, A., Gentile, D. A., Ihori, N., Shibuya, A., Yukawa, S., ... & Kobayashi, K. (2008). Longitudinal effects of violent video games on aggression in Japan and the United States. *Pediatrics*, *122*(5), 1067-1072. DOI: 10.1542/peds.2008-1425
- Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: a meta-analytic review. *Psychological Bulletin*, *136*(2), 151. <http://dx.doi.org/10.1037/a0018251>
- Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review*, *9*(3), 212-230. DOI: 10.1207/s15327957pspr0903_2

- Arseneault, L., Bowes, L., & Shakoor, S. (2010). Bullying victimization in youths and mental health problems: 'Much ado about nothing'?. *Psychological Medicine*, 40(05), 717-729.
DOI: <http://dx.doi.org/10.1017/S0033291709991383>
- Bandura, A. (1977). *Social learning theory*. New York: Prentice Hall.
- Barlett, C. P., & Anderson, C. A. (2013). Examining media effects: The General Aggression and General Learning Models. Chapter in E. Scharrer (Ed.), *Media Effects/Media Psychology*. Cambridge, MA: Blackwell.
- Baron, R. A., & Richardson, D. R. (1994). *Human aggression (2nd ed.)*. New York: Pleun.
- Bartholow, B. D., & Anderson, C. A. (2002). Effects of violent video games on aggressive behavior: Potential sex differences. *Journal of Experimental Social Psychology*, 38(3), 283-290. <http://dx.doi.org/10.1006/jesp.2001.1502>
- Bushman, B. J., & Anderson, C. A. (2007). Measuring the strength of the effect of violent media on aggression. *American Psychologist*, 62(3), 253-254. <http://dx.doi.org/10.1037/0003-066X.62.3.253>
- Bushman, B. J., & Anderson, C. A. (2015). Understanding causality in the effects of media violence. *American Behavioral Scientist* 59(14), 1807-1821.
DOI: <https://doi.org/10.1177/0002764215596554>
- Brendgen, M., Vitaro, F., Tremblay, R. E., & Lavoie, F. (2001). Reactive and proactive aggression: Predictions to physical violence in different contexts and moderating effects of parental monitoring and caregiving behavior. *Journal of Abnormal Child Psychology*, 29(4), 293-304. doi:10.1023/A:1010305828208

- Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture, 4*(4), 305. <http://dx.doi.org/10.1037/ppm0000035>
- Camodeca, M., Goossens, F. A., Terwogt, M. M., & Schuengel, C. (2002). Bullying and victimization among school - age children: Stability and links to proactive and reactive aggression. *Social Development, 11*(3), 332-345.
- Chen, P., Coccaro, E. F., & Jacobson, K. C. (2012). Hostile Attributional Bias, Negative Emotional Responding, and Aggression in Adults: Moderating Effects of Gender and Impulsivity. *Aggressive Behavior, 38*(1), 47-63.
<http://doi.org.proxy.lib.utk.edu:90/10.1002/ab.21407>
- Cornell, D. G., Peterson, C. S., & Richards, H. (1999). Anger as a predictor of aggression among incarcerated adolescents. *Journal of Consulting and Clinical Psychology, 67*(1), 108.
<http://dx.doi.org/10.1037/0022-006X.67.1.108>
- Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development, 67*(5), 2317-2327. DOI: 10.1111/j.1467-8624.1996.tb01859.x
- Crick, N. R. & Dodge, K. A. (1994). A review and reformulation of the social information processing mechanisms in children's adjustment. *Psychological Bulletin, 115*, 74-101.
- Crick, N. R., & Nelson, D. A. (2002). Relational and Physical Victimization Within Friendships: Nobody Told Me There'd Be Friends Like These. *Journal of Abnormal Child Psychology, 6*(30), 599-607. DOI: 10.1023/A:1020811714064
- Cohn, A. M., Jakupcak, M., Seibert, L. A., Hildebrandt, T. B., & Zeichner, A. (2010). The role of emotion dysregulation in the association between men's restrictive emotionality and

- use of physical aggression. *Psychology of Men & Masculinity*, 11(1), 53.
<http://dx.doi.org/10.1037/a0018090>
- Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*, 18(4), 557.
<http://dx.doi.org/10.1037/0012-1649.18.4.557>
- DeWall, C. N., Anderson, C. A., & Bushman, B. J. (2011). The General Aggression Model: Theoretical extensions to violence. *Psychology of Violence*, 1, 245-258. DOI: 10.1037/a0023842
- Dittrick, C. J., Beran, T. N., Mishna, F., Hetherington, R., & Shariff, S. (2013). Do children who bully their peers also play violent video games? A Canadian national study. *Journal of School Violence*, 12(4), 297-318. <http://dx.doi.org/10.1080/15388220.2013.803244>
- Dodge, K. A., & Pettit, G. S. (2003). A biopsychosocial model of the development of chronic conduct problems in adolescence. *Developmental Psychology*, 39(2), 349.
<http://dx.doi.org/10.1037/0012-1649.39.2.349>
- Doyle, M., & Dolan, M. (2006). Evaluating the validity of anger regulation problems, interpersonal style, and disturbed mental state for predicting inpatient violence. *Behavioral Sciences and the Law*, 24(6), 783-798. DOI: 10.1002/bsl.739
- Eckhardt, C., Jamison, T. R., & Watts, K. (2002). Anger experience and expression among male dating violence perpetrators during anger arousal. *Journal of Interpersonal Violence*, 17(10), 1102-1114. DOI: 10.1177/088626002236662
- Eron, L. D., Huesmann, L. R., Lefkowitz, M. M., & Walder, L. O. (1972). Does television violence cause aggression?. *American Psychologist*, 27(4), 253.

- Espelage, D. L., & Holt, M. K. (2001). Bullying and victimization during early adolescence: Peer influences and psychosocial correlates. *Journal of Emotional Abuse, 2*(2-3), 123-142.
http://dx.doi.org/10.1300/J135v02n02_08
- 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*(3), 365-384. <http://digitalcommons.unl.edu/edpsychpapers/154>
- Fekkes, M., Pijpers, F. I. M., Fredriks, M. A., Vogels, T., & Verloove-Vanhorick, P. S. (2006). Do bullied children get ill, or do ill children get bullied? A prospective cohort study on the relationship between bullying and health-related symptoms. *Pediatrics, 117*(5), 1568–1574. DOI: 10.1542/peds.2005-0187
- C. J., & Dyck, D. (2012). Paradigm change in aggression research: The time has come to retire the General Aggression Model. *Aggression and Violent Behavior, 17*(3), 220-228.
<http://dx.doi.org/10.1016/j.avb.2012.02.007>
- Ferguson, C. J., & Kilburn, J. (2009). The public health risks of media violence: A meta-analytic review. *The Journal of Pediatrics, 154*(5), 759-763.
<http://dx.doi.org/10.1016/j.jpeds.2008.11.033>
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of Youth and Adolescence, 43*(1), 127-136. DOI: 10.1007/s10964-013-9986-5
- Ferguson, C. J., Olson, C. K., Kutner, L. A., & Warner, D. E. (2014). Violent video games, catharsis seeking, bullying, and delinquency: a multivariate analysis of effects. *Crime and Delinquency, 60*(5), 764-784. DOI: 10.1177/0011128710362201

- Ferguson, C. J., Rueda, S. M., Cruz, A. M., Ferguson, D. E., Fritz, S., & Smith, S. M. (2008). Violent video games and aggression causal relationship or byproduct of family violence and intrinsic violence motivation?. *Criminal Justice and Behavior*, *35*(3), 311-332. DOI: 10.1177/0093854807311719
- Ferguson, C. J., & Rueda, S. M. (2010). The Hitman study: Violent video game exposure effects on aggressive behavior, hostile feelings, and depression. *European Psychologist*, *15*(2), 99. <http://dx.doi.org/10.1027/1016-9040/a000010>
- Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research*, *46*(2), 141-146. <http://dx.doi.org/10.1016/j.jpsychires.2011.10.014>
- Gazelle, H., & Ladd, G. W. (2002). Interventions for children victimized by peers. In P. A. Schewe (Ed.), *Preventing violence in relationships: Interventions across the life span* (pp. 55-78). Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/10455-003>
- Gentile, D. A. (2014). *Media Violence and Children: A Complete Guide for Parents and Professionals: A Complete Guide for Parents and Professionals*. Santa Barbara: ABC-CLIO.
- Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., ... & Huesmann, L. R. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlational, longitudinal, and experimental studies. *Personality and Social Psychology Bulletin*, *35*(6), 752-763. DOI: 10.1177/0146167209333045

- Gentile, D. A., Choo, H., Liau, A., Sim, T., Li, D., Fung, D., & Khoo, A. (2011). Pathological video game use among youths: A two-year longitudinal study. *Pediatrics*, *127*(2), 219-329. DOI: 10.1542/peds.2010-1353
- Gentile, D. A., Coyne, S., & Walsh, D. A. (2011). Media violence, physical aggression, and relational aggression in school age children: a short-term longitudinal study. *Aggressive Behavior*, *37*(2), 193-206. DOI: 10.1002/ab.20380
- Gentile, D. A., & Gentile, J. R. (2008). Violent video games as exemplary teachers: A conceptual analysis. *Journal of Youth and Adolescence*, *37*(2), 127-141. DOI: 10.1007/s10964-007-92062
- Gentile, D. A., Lynch, P. J., Linder, J. R., & Walsh, D. A. (2004). The effects of violent video game habits on adolescent hostility, aggressive behaviors, and school performance. *Journal of Adolescence*, *27*(1), 5-22. <http://dx.doi.org/10.1016/j.adolescence.2003.10.002>
- Gentile, D. A., Nathanson, A. I., Rasmussen, E. E., Reimer, R. A., & Walsh, D. A. (2012). Do you see what I see? Parent and child reports of parental monitoring of media. *Family Relations*, *61*(3), 470-487. DOI: 10.1111/j.1741-3729.2012.00709.x
- Greitemeyer, T. (2014). Intense acts of violence during video game play make daily life aggression appear innocuous: A new mechanism why violent video games increase aggression. *Journal of Experimental Social Psychology*, *50*, 52-56. <http://dx.doi.org/10.1016/j.jesp.2013.09.004>
- Griffin, K. W., Botvin, G. J., Scheier, L. M., Diaz, T., & Miller, N. L. (2000). Parenting Practices as Predictors of Substance Use, Delinquency, and Aggression Among Urban Minority Youth: Moderating Effects of Family Structure and Gender. *Psychology of Addictive*

- Behaviors: Journal of the Society of Psychologists in Addictive Behaviors*, 14(2), 174–184. <http://dx.doi.org.proxy.lib.utk.edu/90/10.1037/0893-164X.14.2.174>
- Gullone, E., & Taffe, J. (2012). The Emotion Regulation Questionnaire for Children and Adolescents (ERQ–CA): A psychometric evaluation. *Psychological Assessment*, 24(2), 409. <http://dx.doi.org/10.1037/a0025777>
- Hawker, D., & Boulton, M. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry*, 41(4), 441–455.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <http://dx.doi.org/10.1080/10705519909540118>
- Huesmann, L. R., Dubow, E. F., & Boxer, P. (2009). Continuity of aggression from childhood to early adulthood as a predictor of life outcomes: Implications for the adolescent-limited and life-course-persistent models. *Aggressive Behavior*, 35(2), 136-149. <http://dx.doi.org/10.1002/ab.20300>
- Huesmann, L. R., Eron, L. D., Lefkowitz, M. M., & Walder, L. O. (1984). Stability of aggression over time and generations. *Developmental Psychology*, 20(6), 1120. <http://dx.doi.org/10.1037/0012-1649.20.6.1120>
- Huesmann, L. R., Moise-Titus, J., Podolski, C. L., & Eron, L. D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992. *Developmental Psychology*, 39(2), 201. <http://dx.doi.org/10.1037/0012-1649.39.2.201>

- Jago, R., Stamatakis, E., Gama, A., Carvalhal, I. M., Nogueira, H., Rosado, V., & Padez, C. (2012). Parent and child screen-viewing time and home media environment. *American Journal of Preventive Medicine, 43*(2), 150-158. <http://dx.doi.org/10.1016/j.amepre.2012.04.012>
- Konijn, E. A., Nije Bijvank, M., & Bushman, B. J. (2007). I wish I were a warrior: the role of wishful identification in the effects of violent video games on aggression in adolescent boys. *Developmental Psychology, 43*(4), 1038. <http://dx.doi.org/10.1037/0012-1649.43.4.1038>
- Kumpulainen, K., Rasanen, E., & Puura, K. (2001). Psychiatric disorders and the use of mental health services among children involved in bullying. *Aggressive Behavior, 27*(2), 02–110. DOI: 10.1002/ab.3
- Little, R. J. (1995). Modeling the drop-out mechanism in repeated-measures studies. *Journal of the American Statistical Association, 90*(431), 1112-1121.
- Lucas, K., & Sherry, J. L. (2004). Sex differences in video game play: A communication-based explanation. *Communication Research, 31*(5), 499-523. DOI: 10.1177/0093650204267930
- Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 1431-1446*. DOI: 10.2307/1130070
- MacDermott, S. T., Gullone, E., Allen, J. S., King, N. J., & Tonge, B. (2010). The emotion regulation index for children and adolescents (ERICA): a psychometric investigation. *Journal of Psychopathology and Behavioral Assessment, 32*(3), 301-314. DOI: 10.1007/s10862-009-9154-0

- Möller, I., & Krahe, B. (2009). Exposure to violent video games and aggression in German adolescents: A longitudinal analysis. *Aggressive Behavior, 35*(1), 75-89. DOI: 10.1002/ab.20290
- Nishina, A., Juvonen, J., & Witkow, M. (2005). Sticks and stones may break my bones, but names will make me sick: The consequences of peer harassment. *Journal of Clinical Child and Adolescent Psychology, 34*, 37–48. DOI: 10.1207/s15374424jccp3401_4
- Norström, T., & Pape, H. (2010). Alcohol, suppressed anger and violence. *Addiction, 105*(9), 1580-1586. DOI: 10.1111/j.1360-0443.2010.02997.x
- Olweus, D. (1979). Stability of aggressive reaction patterns in males: a review. *Psychological Bulletin, 86*(4), 852. <http://dx.doi.org/10.1037/0033-2909.86.4.852>
- Olweus, D. (2011). Bullying at school and later criminality: Findings from three Swedish community samples of males. *Criminal Behaviour and Mental Health, 21*(2), 151-156. DOI: 10.1002/cbm.806
- Olweus, D. (2013). *Bullying at School: What We Know and What We Can Do*. Cambridge, MA: Blackwell.
- Ostrov, J. M., Gentile, D. A., & Crick, N. R. (2006). Media exposure, aggression and prosocial behavior during early childhood: A longitudinal study. *Social Development, 15*(4), 612-627. DOI: 10.1111/j.1467-9507.2006.00360.x
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational Tools for Probing Interactions in Multiple Linear Regression, Multilevel Modeling, and Latent Curve Analysis. *Journal of Educational and Behavioral Statistics, 31*(4), 437-448. doi: 10.3102/10769986031004437

- Prot, S., Anderson, C. A., Saleem, M., Groves, C. L., & Allen, J. J. (2016). Understanding media violence effects. In A. G. Miller (Ed.) *The Social Psychology of Good and Evil* (2nd Ed.) (pp. 119-139). New York: Guilford Publications.
- Puri, K., & Pugliese, R. (2012). Sex, lies, and video games: Moral panics or uses and gratifications. *Bulletin of Science, Technology & Society*, 32, 345–352. doi: 10.1177/0270467612463799
- Rigby, K., & Slee, P. (1999). Suicidal ideation among adolescent school children involvement in bully-victim problems, and perceived social support. *Suicide and Life-Threatening Behavior*, 29(2), 119–130.
- Roberton, T., Daffern, M., & Bucks, R. S. (2012). Emotion regulation and aggression. *Aggression and Violent Behavior*, 17(1), 72-82.
<http://dx.doi.org/10.1016/j.avb.2011.09.006>
- Röll, J., Koglin, U., & Petermann, F. (2012). Emotion regulation and childhood aggression: Longitudinal associations. *Child Psychiatry & Human Development*, 43(6), 909-923.
doi:10.1007/s10578-012-0303-4
- Romer, D., Jamieson, P. E., Bushman, B. J., Bleakley, A., Wang, A., Langleben, D., & Jamieson, K. H. (2014). Parental desensitization to violence and sex in movies. *Pediatrics*, 134(5), 877-884. DOI: 10.1542/peds.2014-1167
- Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior*, 15(2), 112-120. DOI:10.1016/j.avb.2009.08.007
- Salmivalli, C., & Nieminen, E. (2002). Proactive and reactive aggression among school bullies, victims, and bully-victims. *Aggressive Behavior*, 28(1), 30-44. DOI: 10.1002/ab.90004

- Schäfer, M., Korn, S., Brodbeck, F. C., Wolke, D., & Schulz, H. (2005). Bullying roles in changing contexts: The stability of victim and bully roles from primary to secondary school. *International Journal of Behavioral Development, 29*(4), 323-335.
DOI:10.1177/01650250544000107
- Sheese, B. E., & Graziano, W. G. (2005). Deciding to defect the effects of video-game violence on cooperative behavior. *Psychological Science, 16*(5), 354-357. DOI:10.1111/j.0956-7976.2005.01539.x
- Sherry, J. L. (2001). The effects of violent video games on aggression. *Human Communication Research, 27*(3), 409-431. DOI: 10.1111/j.1468-2958.2001.tb00787.x
- Sherry, J. L. (2007). Violent video games and aggression: Why can't we find effects. *Mass media effects research: Advances through meta-analysis, 245-262*. Cambridge, MA: Blackwell.
- Sherry, J. L., Lucas, K., Greenberg, B. S., & Lachlan, K. (2006). Video game uses and gratifications as predictors of use and game preference. *Playing video games: Motives, responses, and consequences, 24*, 213-224.
- Stavrinides, P., Tsivitanou, A., Nikiforou, M., Hawa, V., & Tsolia, V. (2013). Longitudinal associations between bullying and children's preference for television violence. *International Journal of Criminology and Sociology, 2*, 72.
http://www.academia.edu/3321865/Stavrinides_P._Tsivitanou_A._Nikiforou_M._Hawa_V._and_Tsolia_V._2013_.Longitudinal_associations_between_bullying_and_children_s_preference_for_television_violence._International_Journal_of_Criminology_and_Sociology_2_72-78

- Storch, E. A., & Ledley, D. R. (2005). Peer victimization and psychosocial adjustment in children: Current knowledge and future directions. *Clinical Pediatrics*, 44(1), 29-38.
DOI: 10.1177/000992280504400103
- Sullivan, T. N., Helms, S. W., Kliwer, W., & Goodman, K. L. (2010). Associations between sadness and anger regulation coping, emotional expression, and physical and relational aggression among urban adolescents. *Social Development*, 19(1), 30-51. DOI: 10.1111/j.1467-9507.2008.00531.x
- Tager, D., Good, G. E., & Brammer, S. (2010). "Walking over'em": An exploration of relations between emotion dysregulation, masculine norms, and intimate partner abuse in a clinical sample of men. *Psychology of Men & Masculinity*, 11(3), 233.
<http://dx.doi.org/10.1037/a0017636>
- Tremblay, R. E. (2000). The development of aggressive behaviour during childhood: What have we learned in the past century?. *International Journal of Behavioral Development*, 24(2), 129-141. doi: 10.1080/016502500383232
- Ttofi, M. M., Farrington, D. P., & Lösel, F. (2012). School bullying as a predictor of violence later in life: A systematic review and meta-analysis of prospective longitudinal studies. *Aggression and Violent Behavior*, 17(5), 405-418.
<http://dx.doi.org/10.1016/j.avb.2012.05.002>
- Ttofi, M. M., Farrington, D. P., Lösel, F., & Loeber, R. (2011). Do the victims of school bullies tend to become depressed later in life? A systematic review and meta-analysis of longitudinal studies. *Journal of Aggression, Conflict and Peace Research*, 3(2), 63-73.
<http://dx.doi.org/10.1108/17596591111132873>

- von Salisch, M., Vogelgesang, J., Kristen, A., & Oppl, C. (2011). Preference for violent electronic games and aggressive behavior among children: The beginning of the downward spiral?. *Media Psychology, 14*(3), 233-258.
<http://dx.doi.org/10.1080/15213269.2011.596468>
- 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*(4), 368-375. <http://dx.doi.org/10.1016/j.jadohealth.2009.03.021>
- Willoughby, T., Adachi, P. J., & Good, M. (2012). A longitudinal study of the association between violent video game play and aggression among adolescents. *Developmental Psychology, 48*(4), 1044. <http://dx.doi.org/10.1037/a0026046>

Appendix

Table 1
Descriptive Characteristics for Primary Study Variables

Variables	Time 1		Time 2	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	9.16	.63	-	-
AIM	2.40	.62	-	-
Self-reported RB	.15	.42	.15	.44
Self-reported OB	.25	.44	.21	.45
Peer-reported RB ¹	.45	.89	.70	1.23
Peer-reported OB ¹	.51	1.18	.69	1.36
Teacher-reported RB	.19	.43	.27	.55
Teacher-reported OB	.26	.58	.29	.58
ERQCA-Reappraisal	21.73	4.21	-	-
ERQCA- Suppression	11.82	3.42	-	-
GHMC-TV ¹	11.14	1.14	-	-
GHMC-Video Games ¹	9.88	4.85	-	-
GHMC- Movies ¹	6.48	2.93	-	-
Exposure ¹	9.36	3.20	-	-

Note. *N* = 451. ¹Mean and SD presented are prior to standardization. AIM = Adult Involvement in Media Scale, ERQCA = Emotion Regulation Questionnaire for Children and Adolescents. RB = Relational Bullying. OB = Overt Bullying.

Table 2

Correlations among Primary Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1. Age	-																					
2. Gender	.08	-																				
3. Ethnicity	-.09	.05	-																			
4. Reduced Lunch	-.05	.10*	-.01	-																		
5. Annual Income	-.08	.09	-.21**	-.48**	-																	
6. AIM	.19**	-.07	.06	-.02	-.01	-																
7. T1 RB - self	-.02	.07	.03	.02	-.15**	-.09	-															
8. T2 RB - self	.00	.07	.04	.05	-.09	-.02	.37*	-														
9. T1 OB – self	.01	.00	.04	.10	-.18**	.03	.69**	.44**	-													
10. T2 OB - self	.00	.04	.04	.13*	-.20**	.02	.35**	.73**	.50**	-												
11. T1 RB - teacher	.02	-.08	.08	.04	-.22**	-.08	.17**	.17**	.23**	.28**	-											
12. T2 RB - teacher	.03	-.12*	.10	.17**	-.21**	.03	.21**	.33*	.30**	.44**	.52**	-										
13. T1 OB - teacher	.00	-.03	.12	.09	-.25**	-.09	.14**	.14**	.20**	.18**	.70**	.55**	-									
14. T2 OB - teacher	.01	.02	.13	.13**	-.25**	-.00	.21**	.28**	.30**	.42**	.55**	.85**	.69**	-								
15. T1 OB – peer	-.04	.10*	.04	.08	-.17**	-.02	.06	.07	.18**	.10	.27**	.35**	.34**	.40**	-							
16. T1 RB – peer	-.13*	.02	-.03	.16**	-.09	-.15*	.00	.02	.08	.10	.24**	.32**	.27**	.38**	.66*	-						
17. T2 OB – peer	.01	.16**	.08	.03	-.13**	-.05	.09	.16**	.15**	.27**	.19**	.35**	.21**	.43**	.57*	.45**	-					
18. T2 RB - peer	-.08	.11*	.02	.06	-.09*	-.03	.12	.13*	.15**	.20**	.23**	.34**	.21**	.40**	.47	.53**	.60**	-				
19. ERQCA – Reappraisal	-.07	-.07	.05	.05	-.18**	.08	-.04	-.07	-.06	-.09	.11*	.01	.10	.01	.06	-.08	.02	.00	-			
20. ERQCA - Suppression	-.05	.09*	.11*	.10	-.13**	.05	.06	-.01	.05	-.05	.07	.05	.13**	.11*	.15*	.06	.10	.07	.14*	-		
21. Exposure	-.15*	.17**	.09	.22**	-.30**	-.17**	.11	-.15*	.04	-.07	.09	.13*	.19**	.14*	.11	.08	.10*	.10*	.09	.27**	-	

Note. * $p < .05$; ** $p < .01$. AIM = Adult Involvement in Media, ERQCA = Emotion Regulation Questionnaire for Children and Adolescents. RB = Relational Bullying. OB = Overt Bullying.

Table 3

Hypothesis 1: Gender Differences among Primary Study Variables

Variables	Time 1					Time 2				
	Female		Male		<i>t</i> (<i>df</i>)	Female		Male		<i>t</i> (<i>df</i>)
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>		<i>SD</i>	<i>M</i>	<i>SD</i>		
Self-reported RB	.12	.33	.18	.52	1.21 (256.25)	.13	.34	.18	.54	1.25 (276.75)
Self-reported OB	.23	.38	.23	.50	.07 (376)	.20	.39	.23	.48	.61 (381)
Peer-reported RB ¹	.43	.90	.48	.89	.60 (358)	.59	1.06	.86	1.41	2.34 (444)*
Peer-reported OB ¹	.42	1.03	.64	1.37	1.71 (265.05)	.52	1.10	.93	1.63	2.97 (304.42)**
Teacher-reported RB	.23	.48	.16	.35	1.73(422.96)	.34	.60	.23	.50	1.82 (312.67)
Teacher-reported OB	.27	.59	.25	.53	.28 (422)	.27	.52	.32	.63	.72 (321)
ERQCA: Reappraisal	21.95	4.21	21.34	4.11	1.45 (406)	-	-	-	-	-
ERQCA: Suppression	11.55	3.48	12.22	3.33	1.94 (406)*	-	-	-	-	-
AIM	2.45	.67	2.35	.57	1.32 (273)	-	-	-	-	-
GHMC: TV ¹	11.29	4.43	10.92	3.73	.73 (277)	-	-	-	-	-
GHMC: Video Games ¹	8.37	4.72	11.50	4.46	5.50 (259)**	-	-	-	-	-
GHMC: Movies ¹	6.01	2.53	8.73	3.21	2.93 (181.73)**	-	-	-	-	-
Exposure ¹	8.73	3.21	10.15	3.04	3.81 (280)**	-	-	-	-	-

Note. *N* = 451. **p* < .05; ***p* < .01; ¹Mean and SD presented are prior to standardization. AIM = Adult Involvement in Media Scale, ERQCA = Emotion Regulation Questionnaire for Children and Adolescents. RB = Relational Bullying. OB = Overt Bullying.

Table 4
Parameter Estimates for Overt Bullying from the Model for Hypothesis 2

<u>Self-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.02 (.05)	-.01 (.04)
Boy	.08 (.05)	.07 (.04)
Caucasian	.02 (.01)	.00 (.01)
Reduced Lunch	.07 (.06)	.06 (.07)
Annual Income	-.13 (.02)	-.03 (.02)
Overt Bully T1	.46 (.11)**	.48 (.08)**
Exposure	-.16 (.04)*	-.07 (.03)*
<u>Peer-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.01 (.04)	-.02 (.06)
Boy	.11 (.05)*	.21 (.09)*
Caucasian	.06 (.05)	.03 (.02)
Reduced Lunch	-.01 (.05)	-.03 (.11)
Annual Income	-.03 (.05)	-.02 (.03)
Overt Bully T1	-.55 (.05) **	.55 (.06)**
Exposure	.00 (.05)	.00 (.04)
<u>Teacher-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.08 (.04)	-.08 (.04)
Boy	.06 (.04)	.07 (.05)
Caucasian	.03 (.04)	.01 (.01)
Reduced Lunch	.06 (.05)	.08 (.06)
Annual Income	-.05 (.05)	-.02 (.02)
Overt Bully T1	.68 (.06)**	.68 (.05)**
Exposure	-.04 (.06)	-.02 (.03)

Note. * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 5

Parameter Estimates for Relational Bullying from the Model for Hypothesis 2

<u>Self-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.03 (.07)	-.02 (.05)
Boy	.10 (.05)	.09 (.05)
Caucasian	.04 (.06)	.01 (.01)
Reduced Lunch	.08 (.06)	.07 (.06)
Annual Income	-.07 (.06)	-.02 (.02)
Relational Bully T1	-.38 (.09)**	.40 (.11)**
Exposure	-.03 (.07)*	-.01 (.04)*
<u>Peer-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.03 (.04)	-.01 (.04)
Boy	.10 (.04)*	.10 (.05)*
Caucasian	.02 (.04)	.05 (.05)
Reduced Lunch	-.06 (.05)	-.01 (.05)
Annual Income	-.07 (.05)	-.03 (.05)
Relational Bully T1	.53 (.05)**	.55 (.05)**
Exposure	.04 (.05)	.00 (.05)
<u>Teacher-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.09 (.05)	-.08 (.05)
Boy	-.06 (.05)	-.07 (.05)
Caucasian	.04 (.05)	.01 (.01)
Reduced Lunch	.12 (.05)*	.15 (.06)*
Annual Income	-.01 (.06)	-.00 (.02)
Relational Bully T1	.49 (.09)**	.63 (.09)**
Exposure	.06 (.06)	.03 (.03)

Note. * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 6

Parameter Estimates for Overt Bullying and 2-way Interaction from the Model for Hypothesis 3

<u>Self-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.02 (.06)	-.01 (.04)
Boy	.09 (.04)*	.08 (.04)*
Caucasian	.01 (.06)	.00 (.01)
Reduced Lunch	.07 (.07)	.06 (.07)
Annual Income	-.13 (.06)*	-.03 (.02)*
Overt Bully T1	.46 (.06)**	.47 (.09)**
Exposure	-.08 (.08)	-.04 (.03)
Exposure x Boy	-.12 (.09)	-.08 (.06)
<u>Peer-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.01 (.04)	-.02 (.06)
Boy	.11 (.05)*	.21 (.09)*
Caucasian	.06 (.05)	.02 (.02)
Reduced Lunch	-.01 (.05)	-.03 (.10)
Annual Income	-.03 (.05)	-.02 (.03)
Overt Bully T1	.55 (.06)**	.55 (.06)**
Exposure	.02 (.05)	.02 (.05)
Exposure X Boy	-.03 (.05)	-.04 (.08)
<u>Teacher-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.08 (.04)	-.08 (.04)
Boy	.06 (.04)	.07 (.05)
Caucasian	.03 (.04)	.01 (.01)
Reduced Lunch	.06 (.05)	.08 (.06)
Annual Income	-.05 (.05)	-.02 (.02)
Overt Bully T1	.68 (.04)**	.68 (.05)**
Exposure	-.02 (.07)	-.01 (.04)
Exposure X Boy	-.04 (.05)	-.03 (.05)

Note. * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors

Table 7

Parameter Estimates for Relational Bullying and 2-way Boy Interaction from the Model for Hypothesis 3

<u>Self-reported Relational Bully at Time 2</u>		
<u>Variable</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.03 (.07)	-.02 (.05)
Boy	.11 (.05)*	.10 (.01) ⁺
Caucasian	.04 (.06)	.01 (.06)
Reduced Lunch	.08 (.06)	.07 (.06)
Annual Income	-.07 (.06)	-.02 (.02)
Relational Bully T1	.38 (.09)**	.40 (.04)**
Exposure	-.19 (.08)*	-.08 (.04)*
Exposure x Boy	-.09 (.10)	-.06 (.07)
<u>Peer-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.03 (.04)	-.04 (.07)
Boy	.10 (.04)*	.18 (.08)*
Caucasian	.02 (.05)	.01 (.02)
Reduced Lunch	-.06 (.05)	-.13 (.10)
Annual Income	-.07 (.05)	-.04 (.03)
Relational Bully T1	.53 (.05)**	.54 (.05)**
Exposure	.03 (.06)	.03 (.06)
Exposure x Boy	.01 (.06)	.02 (.08)
<u>Teacher-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.09 (.05)	-.08 (.045)
Boy	-.06 (.05)	-.07 (.05)
Caucasian	-.04 (.05)	.01 (.01)
Reduced Lunch	.12 (.05)*	.14 (.06)*
Annual Income	-.01 (.05)	-.01 (.02)
Relational Bully T1	.50 (.07)**	.62 (.08)**
Exposure	.10 (.08)	.05 (.04)
Exposure x Boy	-.07 (.06)	-.06 (.05)

Note. ⁺ $p < .06$; * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 8

Parameter Estimates for Overt Bullying and 2-way interactions with Moderating Variables from the Model for Hypothesis 4

<u>Self-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.02 (.06)	-.02 (.04)
Boy	.08 (.04)*	.07 (.04) ⁺
Caucasian	.02 (.05)	.00 (.01)
Reduced Lunch	.06 (.07)	.06 (.06)
Annual Income	-.15 (.06)*	-.04 (.02)*
Overt Bully T1	.46 (.06)**	.47 (.09)**
AIM	.00 (.07)	.00 (.05)
ERQCA Suppression	-.06 (.05)	-.01 (.01)
ERQCA Reappraisal	-.06 (.04)	-.01 (.01)
Exposure	-.13 (.06)*	-.06 (.03)*
Exposure x AIM	.06 (.06)	.04 (.05)
Exposure x ERQCA Suppression	.02 (.06)	.00 (.01)
Exposure x ERQCA Reappraisal	.01 (.05)	.00 (.01)
<u>Peer-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.01 (.04)	-.01 (.06)
Boy	.11 (.05)*	.20 (.09)*
Caucasian	.07 (.05)	.03 (.02)
Reduced Lunch	-.01 (.05)	-.03 (.11)
Annual Income	-.04 (.04)	-.02 (.03)
Overt Bully T1	.56 (.06)**	.55 (.06)**
AIM	-.03 (.06)	-.05 (.09)
ERQCA Suppression	.00 (.05)	.00 (.01)
ERQCA Reappraisal	-.01 (.05)	.00 (.01)
Exposure	.00 (.05)	.00 (.04)
Exposure x AIM	.02 (.05)	.02 (.07)
Exposure x ERQCA Suppression	.01 (.05)	.00 (.01)
Exposure x ERQCA Reappraisal	-.03 (.04)	-.01 (.01)

Table 8 Continued

<u>Teacher-reported Overt Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.10 (.05)*	-.10 (.04)*
Boy	.06 (.04)	.07 (.05)
Caucasian	.03 (.04)	.01 (.01)
Reduced Lunch	.05 (.05)	.07 (.06)
Annual Income	-.06 (.05)	-.02 (.02)
Overt Bully T1	.70 (.04)**	.69 (.05)**
AIM	.08 (.06)	.07 (.05)
ERQCA Suppression	.01 (.05)	.00 (.01)
ERQCA Reappraisal	-.08 (.04)	-.01 (.01)
Exposure	-.03 (.06)	-.02 (.03)
Exposure x AIM	-.02 (.05)	-.03 (.04)
Exposure x ERQCA Suppression	.01 (.05)	.00 (.01)
Exposure x ERQCA Reappraisal	-.02 (.04)	.00 (.01)

Note. ⁺ $p < .06$; * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 9

Parameter Estimates for Relational Bullying and 2-way Interactions with Moderating Variables from the Model for Hypothesis 4

<u>Self-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.03 (.07)	-.02 (.05)
Boy	.10 (.05)*	.09 (.05)*
Caucasian	.04 (.06)	.01 (.01)
Reduced Lunch	.06 (.06)	.06 (.06)
Annual Income	-.08 (.06)	-.02 (.02)
Relational Bully T1	.37 (.09)**	.39 (.11)**
AIM	.04 (.05)	-.01 (.05)
ERQCA Suppression	.01 (.06)	.00 (.01)
ERQCA Reappraisal	-.04 (.06)	-.01 (.01)
Exposure	-.25 (.07)**	-.11 (.03)**
Exposure x AIM	.07 (.08)	.04 (.05)
Exposure x ERQCA Suppression	.04 (.06)	.01 (.01)
Exposure x ERQCA Reappraisal	.09 (.07)	.01 (.01)
<u>Peer-reported Relational Bully at Time 2</u>		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.01 (.05)	-.02 (.07)
Boy	.10 (.04)**	.20 (.08)*
Caucasian	.02 (.05)	.01 (.02)
Reduced Lunch	-.06 (.05)	-.12 (.10)
Annual Income	-.06 (.05)	-.03 (.03)
Relational Bully T1	.54 (.05)**	.55(.05)**
AIM	.07 (.06)	.10 (.09)
ERQCA Suppression	.00 (.05)	.00 (.01)
ERQCA Reappraisal	.03 (.04)	.01 (.01)
Exposure	.04 (.05)	.04 (.05)
Exposure x AIM	-.02 (.05)	-.03 (.07)
Exposure x ERQCA Suppression	.02 (.05)	.01 (.01)
Exposure x ERQCA Reappraisal	-.04 (.04)	-.01 (.01)

Table 9 Continued

Teacher-reported Relational Bully at Time 2		
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.12 (.05)*	-.10 (.05)*
Boy	-.51 (.05)	-.06 (.05)
Caucasian	.04 (.05)	.01 (.01)
Reduced Lunch	.12 (.05)*	.14 (.06)*
Annual Income	-.01 (.06)	.00 (.02)
Relational Bully T1	.51 (.06)**	.65 (.08)**
AIM	.10 (.07)	.09 (.06)
ERQCA Suppression	-.02 (.05)	.00 (.01)
ERQCA Reappraisal	-.08 (.07)	-.01 (.01)
Exposure	.08 (.06)	.04 (.04)
Exposure x AIM	-.03 (.06)	-.03 (.05)
Exposure x ERQCA Suppression	.04 (.05)	.01 (.01)
Exposure x ERQCA Reappraisal	-.02 (.05)	-.01 (.01)

Note. * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 10

Parameter Estimates for Overt Bullying and 3-way Interactions with Moderating Variables and Boy from the Model for Hypothesis 5

<u>Self-reported Overt Bully at Time 2</u>			
<u>Parameter</u>		<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
	Age	-.02 (.06)	-.02 (.04)
	Boy	.08 (.04)*	.08 (.04) ⁺
	Caucasian	.02 (.06)	.00 (.01)
	Reduced Lunch	.06 (.07)	.05(.07)
	Annual Income	-.15 (.06)*	-.04 (.02)*
	Overt Bully T1	.45 (.07)**	.47 (.09)**
	AIM	-.01 (.07)	.00 (.05)
	ERQCA Suppression	-.06 (.05)	-.01 (.01)
	ERQCA Reappraisal	-.07 (.04)	-.01 (.01)
	Exposure	-.13 (.06)*	-.06 (.03)*
	Exposure x AIM x Boy	.09 (.09)	.10 (.10)
	Exposure x ERQCA Suppression x Boy	.01 (.06)	.00 (.01)
	Exposure x ERQCA Reappraisal x Boy	.03 (.06)	.00 (.01)
<u>Peer-reported Overt Bully at Time 2</u>			
<u>Parameter</u>		<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
	Age	-.01 (.04)	-.01 (.07)
	Boy	.11 (.05)*	.21 (.09)*
	Caucasian	.06 (.05)	.03 (.02)
	Reduced Lunch	-.02 (.05)	-.03 (.11)
	Annual Income	-.04 (.05)	-.02 (.03)
	Overt Bully T1	.56 (.06)**	.55 (.06)**
	AIM	-.03 (.06)	-.05 (.09)
	ERQCA Suppression	.00 (.05)	.00 (.01)
	ERQCA Reappraisal	-.01 (.05)	.00 (.01)
	Exposure	.00 (.05)	.00 (.04)
	Exposure x AIM x Boy	.02 (.05)	.05 (.11)
	Exposure x ERQCA Suppression x Boy	-.02 (.05)	-.01 (.02)
	Exposure x ERQCA Reappraisal x Boy	-.02 (.04)	-.01 (.02)

Table 10 Continued

<u>Parameter</u>	<u>Teacher-reported Overt Bully at Time 2</u>	
	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.10 (.05)*	-.10 (.04)*
Boy	.06 (.04)	.07 (.05)
Caucasian	.03 (.04)	.01 (.01)
Reduced Lunch	.05 (.05)	.07 (.06)
Annual Income	-.06 (.05)	-.02 (.02)
Overt Bully T1	.69 (.04)**	.69 (.05)**
AIM	.08 (.06)	.07 (.05)
ERQCA Suppression	.01 (.05)	.00 (.01)
ERQCA Reappraisal	-.08 (.05)	-.01 (.01)
Exposure	-.03 (.06)	-.02 (.03)
Exposure x AIM x Boy	-.01 (.04)	-.02 (.06)
Exposure x ERQCA Suppression x Boy	.01 (.04)	.00 (.01)
Exposure x ERQCA Reappraisal x Boy	.01 (.04)	.00 (.01)

Note. ⁺ $p < .06$; * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Table 11
Parameter Estimates for Relational Bullying and 3-way Interactions with Moderating Variables and Boy from the Model for Hypothesis 5

<u>Self-reported Relational Bully at Time 2</u>			
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>	
Age	-.03 (.07)	-.02 (.05)	
Boy	.10 (.05)*	.09 (.05) ⁺	
Caucasian	.04 (.06)	.01 (.01)	
Reduced Lunch	.06 (.06)	.06 (.06)	
Annual Income	-.09 (.06)	-.02 (.02)	
Relational Bully T1	.37 (.09)**	.38 (.11)**	
AIM	-.03 (.08)	-.02 (.06)	
ERQCA Suppression	.01 (.06)	.00 (.01)	
ERQCA Reappraisal	-.06 (.06)	-.01 (.01)	
Exposure	-.24 (.07)**	-.10 (.03)*	
Exposure x AIM x Boy	.13 (.11)	.13 (.11)	
Exposure x ERQCA Suppression x Boy	.03 (.06)	.01 (.01)	
Exposure x ERQCA Reappraisal x Boy	.05 (.06)	.01 (.01)	
<u>Peer-reported Relational Bully at Time 2</u>			
<u>Parameter</u>	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>	
Age	-.02 (.05)	-.03 (.07)	
Boy	.10 (.04)*	.20 (.08)*	
Caucasian	.01 (.05)	.01 (.02)	
Reduced Lunch	-.07 (.05)	-.14 (.11)	
Annual Income	-.06 (.05)	-.03 (.03)	
Relational Bully T1	.55 (.05)**	.55 (.05)**	
Exposure	.06 (.06)	.10 (.09)	
AIM	.00 (.05)	.00 (.01)	
ERQCA Suppression	.04 (.04)	.01 (.01)	
ERQCA Reappraisal	.05 (.05)	.04 (.05)	
Exposure x AIM x Boy	.03 (.05)	.07 (.11)	
Exposure x ERQCA Suppression x Boy	.03 (.04)	.01 (.02)	
Exposure x ERQCA Reappraisal x Boy	-.04 (.04)	-.01 (.01)	

Table 11 Continued

<u>Parameter</u>	<u>Teacher-reported Relational Bully at Time 2</u>	
	<u>Std. Est. (S.E.)</u>	<u>Est. (S.E.)</u>
Age	-.12 (.05)*	-.10 (.05)*
Boy	-.06 (.05)	-.07 (.05)
Caucasian	.04 (.05)	.01 (.01)
Reduced Lunch	.12 (.05)*	.14 (.07)*
Annual Income	-.01 (.06)	.00 (.02)
Relational Bully T1	.51 (.06)**	.65 (.08)**
AIM	.11 (.07)	.09 (.06)
ERQCA Suppression	-.02 (.05)	.00 (.01)
ERQCA Reappraisal	-.08 (.05)	-.01 (.01)
Exposure	.08 (.07)	.04 (.04)
Exposure x AIM x Boy	-.02 (.05)	-.03 (.07)
Exposure x ERQCA Suppression x Boy	.02 (.05)	.01 (.01)
Exposure x ERQCA Reappraisal x Boy	-.03 (.05)	-.01 (.01)

Note. ⁺ $p < .06$; * $p < .05$; ** $p < .01$; Results are from a single analysis simultaneously regressing each DV on the set of predictors.

Demographics

ID#: _____ (leave blank)

DATE: _____

SCHOOL: _____

GRADE: _____

TEACHER: _____

BIRTHDATE: _____

Please answer the questions below. All responses are voluntary.

1. What is the gender of your child?

- BOY
- GIRL

7. How many siblings live in the home?

2. Is this the 1st year your child is at this school?

- YES
- NO

8. Does your child receive a reduced lunch at school?

- YES
- NO

3. What is your child's race or ethnicity?

- WHITE
- BLACK
- ASIAN
- ESKIMO/ALEUT
- SPANISH/HISPANIC
- AMERICAN INDIAN
- PACIFIC ISLANDER
- BI/MULTI-RACIAL
- OTHER: _____

Does your child receive a free lunch at school?

- YES
- NO

4. What language is spoken most often in your home?

- ENGLISH
- SPANISH
- OTHER _____

9. What is your annual household income?

- Less than 10,000 dollars
- 10,000-25,000 dollars
- 25,000-35,000 dollars
- 35,000 – 50,000 dollars
- 50,000 – 100,000 dollars
- greater than 100,000 dollars

5. Are there any other languages spoken in your home?

- ENGLISH
- SPANISH
- OTHER _____

6. Who lives in your house?

- MOTHER
- STEP-MOTHER
- FATHER
- STEP- FATHER
- MOTHER'S BOYFRIEND
- FATHER'S GIRLFRIEND
- GRANDMOTHER
- GRANDFATHER
- UNCLE
- AUNT
- COUSIN
- OTHER: _____

ERQ-CA

Instructions: These questions are about what you do when you have feelings (examiner reads each question out loud to the student). All responses are voluntary.

1. When I want to feel happier, I think about something different.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

2. I keep my feelings to myself.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

3. When I want to feel less bad (like sad, angry or worried), I think about something different.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

4. When I am feeling happy, I am careful not to show it.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

5. When I'm worried about something, I make myself think about it in a way that helps me feel better.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

6. I control my feelings by not showing them.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

7. When I want to feel happier about something, I change the way I'm thinking about it.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

8. I control my feelings about things by changing the way I think about them.

Completely	Disagree	Neither agree	Agree	Completely
------------	----------	---------------	-------	------------

disagree		or disagree		Agree
----------	--	-------------	--	-------

9. When I'm feeling bad (e.g., sad, angry or worried), I'm careful not to show it.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

10. When I want to feel less bad (like sad, angry or worried) about something, I change the way I'm thinking about it.

Completely disagree	Disagree	Neither agree or disagree	Agree	Completely Agree
---------------------	----------	---------------------------	-------	------------------

Bullying Definition

(A trained research assistant will read the definition of bullying out loud to students prior to completing student-report and peer-nomination bullying items. The definition will also be included with questionnaires given to teachers.)

We say that a child is bullied when another student harms them on purpose. Some of the things that could harm another student include hitting, pushing, saying mean things, telling lies, or spreading rumors. When someone is bullied, these things happen more than just once and the students aren't easily able to defend themselves. We also call it bullying when a student is teased repeatedly in a mean and hurtful way.

We do not call it bullying when the teasing is done in a friendly and playful way, when it happens only one time, or when students of equal strength or power argue or fight.

Illinois Bully Scale

For each of the following questions, choose how many times you did this activity or how many times these things happened to you in the LAST 30 DAYS:

1. I upset other students for the fun of it.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

2. In a group I teased other students.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

3. I fought students I could easily beat.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

4. Other students picked on me.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

5. Other students made fun of me.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

6. Other students called me names.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

7. I got hit and pushed by other students.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

8. I helped harass other students.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

9. I teased other students.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

10. I got in a physical fight.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat	Pretty Upset	Very Upset
-----------	--------------	----------	--------------	------------

		Upset		
--	--	-------	--	--

11. I threatened to hurt or hit another student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

12. I got into a physical fight because I was angry.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

13. I hit back when someone hit me first.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

14. I was mean to someone when I was angry.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

15. I spread rumors about other students.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

16. I started (instigated) arguments or conflicts.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

17. I encouraged people to fight.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

18. I excluded other students from my clique of friends.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

If it happened, how upset did it make you feel?

Not Upset	Barely Upset	Somewhat Upset	Pretty Upset	Very Upset
-----------	--------------	----------------	--------------	------------

Participant Roles

Using your class roster, circle the numbers of the kids in your class to answer each question. Do not circle yourself. All responses are voluntary.

1. Who in your class do you like the most?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

2. Who in your class bullies other children by hitting, pushing threatening, or teasing them?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

3. Who in your class do you like the least?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

4. Who in your class bullies other children by gossiping about them, telling lies, or leaving them out of activities?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

5. Who in your class gets hit, pushed, threatened, or teased by other children?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

6. Who in your class gets gossiped about or left out of activities?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

7. Circle the number of the students who are your best friends?

01	07	13	19
----	----	----	----

02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

8. Circle the number of the student who is your best friend.

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

9. Circle the number students who are popular.

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

10. Who in your class gets along best the teacher?

01	07	13	19
02	08	14	20
03	09	15	21
04	10	16	22
05	11	17	23
06	12	18	24

Favorite TV shows, video games, & movies survey (GMHC-C)

All responses are voluntary.

INSTRUCTIONS:

- ◆ This survey is mostly about the TV shows you like to watch, the video games you like to play, and the movies or videos you like to watch. When we ask about video games, we mean any games you play on computer, on video game consoles (such as Nintendo), on hand-held game devices (such as Gameboys), or in video arcades.
- ◆ Sometimes a question that seems clear to us may not seem clear to you. So if you're not sure you understand what a question means, please ask us.
- ◆ Remember – this questionnaire is not a test. You will not be graded. There are no right or wrong answers. If you are unsure about an answer to a question, please just give us your best guess of what the answer might be.
- ◆ On most questions, all you need to do is check ONE box – whichever one comes closest to your answer. It's important that people tell us the truth when they answer the questions. If you really don't want to answer a particular question, please leave it blank rather than making up an answer.
- ◆ After asking you about some of your favorite shows and games, we will sometimes ask you to tell us how violent they are. By violence, we mean any time someone does something to try to hurt another person.

1. What are your 3 favorite television shows?

Title #1 (First favorite TV show): _____

How often do you watch this show? Almost every day
 About 2-3 times a week
 About once a week
 A couple of times a month
 I almost never watch this show

How often do characters help each other in this show?
 Always Often Sometimes Rarely Never

How often do characters try to shoot or hurt each other in this show?
 Always Often Sometimes Rarely Never

How often do characters try to hurt each other's feelings in this show?
 Always Often Sometimes Rarely Never

Title #2 (Second favorite TV show): _____

How often do you watch this show? Almost every day
 About 2-3 times a week
 About once a week
 A couple of times a month
 I almost never watch this show

How often do characters help each other in this show?
 Always Often Sometimes Rarely Never

How often do characters try to shoot or hurt each other in this show?
 Always Often Sometimes Rarely Never

How often do characters try to hurt each other's feelings in this show?
 Always Often Sometimes Rarely Never

Title #3 (Third favorite TV show): _____

How often do you watch this show? Almost every day
 About 2-3 times a week

__ A couple of times a month
__ I almost never play this game

How often do players help each other in this video game?

Always Often Sometimes Rarely Never

How often do **you** help others in this game?

Always Often Sometimes Rarely Never

How often do you shoot or kill **creatures** in this game?

Always Often Sometimes Rarely Never

How often do you shoot or kill other **players** in this game?

Always Often Sometimes Rarely Never

How often do players try to hurt each other's feelings in this game?

Always Often Sometimes Rarely Never

Title #3 (Third favorite video game): _____

How often do you play this game?

__ Almost every day
__ About 2-3 times a week
__ About once a week
__ A couple of times a month
__ I almost never play this game

How often do players help each other in this video game?

Always Often Sometimes Rarely Never

How often do **you** help others in this game?

Always Often Sometimes Rarely Never

How often do you shoot or kill **creatures** in this game?

Always Often Sometimes Rarely Never

How often do you shoot or kill other **players** in this game?

Always Often Sometimes Rarely Never

How often do players try to hurt each other's feelings in this game?

Always Often Sometimes Rarely Never³.

What are your 3 favorite movies or videos?

Title #1 (First favorite movie or video): _____

How often do you watch this movie? ___ Almost every day
___ About 2-3 times a week
___ About once a week
___ A couple of times a month
___ I almost never watch this movie

How often do characters help each other in this movie?
 Always Often Sometimes Rarely Never

How often do characters try to shoot or hurt each other in this movie?
 Always Often Sometimes Rarely Never

How often do characters try to hurt each other's feelings in this movie?
 Always Often Sometimes Rarely Never

Title #2 (Second favorite movie or video): _____

How often do you watch this movie? ___ Almost every day
___ About 2-3 times a week
___ About once a week
___ A couple of times a month
___ I almost never watch this movie

How often do characters help each other in this movie?
 Always Often Sometimes Rarely Never

How often do characters try to shoot or hurt each other in this movie?
 Always Often Sometimes Rarely Never

How often do characters try to hurt each other's feelings in this movie?
 Always Often Sometimes Rarely Never

Title #3 (Third favorite movie or video): _____

How often do you watch this movie? ___ Almost every day
___ About 2-3 times a week
___ About once a week
___ A couple of times a month
___ I almost never watch this movie

How often do characters help each other in this movie?
 Always Often Sometimes Rarely Never

How often do characters try to shoot or hurt each other in this movie?

Always Often Sometimes Rarely Never

How often do characters try to hurt each other's feelings in this movie?

Always Often Sometimes Rarely Never

6. Do you have a television in your bedroom? __Yes __No

7. Do you play video or computer games in your bedroom? __Yes __No

8. On a scale from 1 to 5, how much violence do you like to have in video games?

No Violence: 1 2 3 4 5 **:Extreme Violence**

Illinois Bully Scale-Teacher version

For each of the following questions, choose how many times you did this activity or how many times these things happened in the LAST 30 DAYS. All responses are voluntary.

1. Teased or said mean things to a student who is obviously weaker or less popular.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

2. Spread lies or rumors about a student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

3. Purposefully excluded or encouraged others to exclude a student from activities or friendships.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

4. Used the Internet (e-mail, text messaging, instant messaging, or other) to spread a lie or make fun of a student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

5. Tried to pick a fight with (or threatened to fight) a weaker student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

6. Been physically aggressive or mean to a weaker student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

7. Supported or said something nice to a student who was bullied.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

8. Tried to defend a student who was being bullied.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

9. Encouraged others not to tease or pick on a student.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

10. Reported to staff that someone was bullied.

Never	1 or 2 times	3 or 4 times	5 or 6 times	7 or more times
-------	--------------	--------------	--------------	-----------------

Vita

Brianna Elizabeth Pollock was born and raised in Hunlock Creek, Pennsylvania. She earned her Bachelor of Science degree in Honors Psychology at the University of Pittsburgh in 2011. She began her doctoral training in Clinical Psychology at the University of Tennessee – Knoxville in 2012, where she earned her Master of Arts degree in 2014. She will begin her final phase of training, a clinical psychology internship at the Institute of Living in Hartford, CT, in the fall of 2017.