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Is the television rating system valid? Indirect, verbal, and physical aggression in programs viewed by fifth grade girls and associations with behavior

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ABSTRACT

This study had two goals: first, to examine the validity of the television rating system for assessing aggression in programs popular among girls; second, to evaluate the importance of inclusion of non-physical forms of aggression in the ratings system by examining associations between television aggression exposure and behavior. Ninety-nine fifth grade girls listed their favorite programs; 76 programs were coded for total, rewarded, and justified indirect, verbal, and physical aggression. Teachers reported participants' aggressive and prosocial behaviors. Results indicated that the age-based ratings do not reflect the amount of total indirect and verbal aggression in programs, and there were higher levels of physical aggression and justified verbal aggression in children's programs than in programs for general audiences, contrary to hypotheses. The industry violent content ratings identified programs with higher mean levels of physical aggression, but did not distinguish programs that contained violence from those that did not. Exposure to televised physical aggression, verbal aggression, and rewarded indirect aggression was associated with higher child aggression and decreased prosocial behavior. Implications for the validity of the industry ratings are discussed.

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1. Introduction

A large body of research has documented associations between viewing violent television and physical aggression among children (for reviews, see Anderson et al., 2003; Bushman & Huesmann, 2001; Gentile, 2003; Paik & Comstock, 1994). As a result, concerned parents rely on the current television rating system in order to limit the aggressive content of the television programs viewed by their children. Most of the research, however, has focused on the effects of televised physical aggression, and the existing television rating system only considers physical aggression. Although there is limited empirical research on the effects of televised verbal and indirect aggression, theoretical perspectives suggest that these portrayals may negatively influence behavior. This article aims to add to the existing research on the television rating system and media effects by considering these non-physical forms of aggression. The first goal was to examine the validity of the current television rating system for programs popular among fifth grade girls. Specifically, we examined the amount of indirect, verbal, and physical aggression present in programs with varying ratings. The second goal was to evaluate evidence that might support the inclusion of both physical and non-physical forms of aggression in the ratings system. Specifically, relations between girls' exposure to televised indirect, verbal, and physical aggression and their aggressive and prosocial behaviors were examined.

Although societal concerns about the effects of violence on television have been voiced since its inception (e.g., Smith, 1952), it was not until relatively recently that a rating system was developed in response to these concerns. The rating system was developed "voluntarily" after the Telecommunications Act of 1996 mandated that all televisions sold after January 1, 2000 with screens 13 in. or larger include a "V-chip." The V-chip is a computer chip in a television that can filter out certain types of programs,

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and for it to function, programs had to have a rating so that parents could block particular content. In this way, Congress effectively required that a rating system be created for the V-chip to read.

The former president of the Motion Picture Association of America, Jack Valenti, worked in collaboration with the National Association of Broadcasters and the National Cable Television Association to develop a rating system. The system originally created was an age-based approach with six ratings: two were specifically for children's programs (TV-Y and TV-Y7), and four for non-children's "general audience" programs (TV-G, TV-PG, TV-14, TV-MA). Parents, researchers, and child advocacy organizations soon voiced strong criticism of this rating system, in part because it contained no information about the content of programming (Kunkel, 2003). In response to the criticisms, the ratings were amended to include five content descriptors in addition to the six age-based categories. The five content descriptors are V (violence), FV (fantasy violence), L (offensive language), S (sexual situations), and D (suggestive dialogue). Although this seems comprehensive, programs rated TV-Y, TV-Y7, or TV-G never include content ratings with one exception: FV (fantasy violence) is *only* used in conjunction with the TV-Y7 rating. For programs rated TV-PG or higher, content descriptors may be included. The ratings are displayed on-screen for the first 15 s of a program on a broadcast network (FCC, 2003), and some networks also display them at other times.

The current rating system has poor reliability and validity (Gentile, 2008; Gentile, Humphrey, & Walsh, 2005). One problem is that each network rates its own programming, which means that two networks could give the same program or movie a different rating. Although this is a rare occurrence, it does happen from time to time, and it is more likely as programs go into syndication. There are also no published industry standards by which programs are rated. To test the validity of the age-based ratings, the National Institute on Media and the Family created a combination age-based and content-based rating system designed to be applicable to all media. The system (called KidScore) used panels of parent raters who were trained to make scientifically reliable judgments on several dimensions of program content. The KidScore ratings were validated with a randomly selected national sample of 600 untrained parents (Walsh & Gentile, 2001). The KidScore ratings were then compared with the industry ratings for 253 television programs. Results indicated that only 40% of shows rated TV-G were judged as clearly appropriate for children 3 to 7. Over half (57%) of shows rated TV-Y7 and fewer than one out of four (23%) shows with a TV-PG rating were rated as appropriate for children ages 8 to 12. Only 15% of TV-14-rated shows were rated as appropriate for teens 13 to 17. These percentages should each be close to 100% if the ratings were completely valid.

Surveys of parents also indicate dissatisfaction with the rating system. In nationally representative studies, half of parents stated that they have disagreed with a rating given a television show (Kunkel et al., 1998), and only 2% of parents who had used the television ratings believed that they always reflected the content of the shows accurately (Rideout, 2004). This low agreement with the industry ratings may explain why less than half (49%) of parents believe that the ratings are "very useful" in making decisions about television shows for their children (Rideout, 2007). This lack of confidence in the rating system may contribute to the low percentage (28%) of parents who "often" use the ratings to make decisions about family and child viewing (Rideout, 2007).

The content descriptors that assess aggressive content also have problems with validity and reliability. In one large-scale content analysis of 2757 television programs, 79% of shows that contained violence did not include the V descriptor rating, (Kunkel et al., 2001). Among children's shows containing violence, 81% did not include the FV rating. This poor validity is particularly concerning given that parents overwhelmingly state that they want content-based ratings rather than (or in addition to) age-based ratings (Bushman & Cantor, 2003; Cantor, 1998; Cantor, Stutman, & Duran, 1996; Gentile, 1996). An additional problem with the specific content descriptors that alert parents to violent content (V and FV) is that these ratings do not consider the contextual features of the violence that can affect the likelihood of youth copying the violence. For example, violence that is rewarded or justified can increase the likelihood that children will imitate such acts (Smith & Donnerstein, 1998; Wilson et al., 1998). This makes some violent depictions higher risk than others. An analysis by Kunkel et al. (2001) of 1332 programs revealed that over two-thirds (69%) of children's shows with high-risk violent content was rated as TV-Y and did not include the "V" or "FV" content descriptor. Among general audience shows (not specifically designed for children) that include high-risk violent content, 40% were rated TV-PG, and two-thirds (65%) again had no "V" content descriptor. Therefore, the current content descriptors may be of limited use in identifying programs containing the types of aggression that may be most harmful for children.

Another concern is that the current television rating system does not consider non-physical forms of aggression, such as verbal and indirect aggression, despite the presence of these types of aggression on television. Researchers tend to agree that the term verbal aggression refers to direct non-physical behaviors with the intent to harm, such as insults. In contrast, the terms indirect, social, and relational aggression have all been used to describe more covert non-physical aggressive behaviors such as gossiping, social exclusion, and eye-rolling. Although these terms are not used interchangeably, there is considerable overlap in the behaviors classified as each (for a review, see Archer & Coyne, 2005). The current study uses the term indirect aggression, as defined by Coyne and Archer (2004) in their content analysis of British television, to describe all behaviors on television that inflict harm either verbally or nonverbally through the manipulation of relationships or social status. Verbal and indirect (including relational) aggression are used more frequently by girls than physical aggression (for a review, see Björkqvist, 1994; Crick et al., 1999), and therefore may be of particular importance in examining the effects of televised aggression on girls.

In contrast to the abundant research on physical aggression on television, there is limited information on the amount and effects of verbal and indirect aggression on television. Research done in the early 1980s indicated that verbal aggression is prevalent on television, with an average of 7–20 acts per hour, depending on the genre (Greenberg, Edison, Korzenny, Fernandez-Collado, & Atkin, 1980; Williams, Zabrack, & Joy, 1982). A more recent analysis by Feshbach (2005) of a small sample of television shows popular among adolescents revealed that verbal and indirect aggression occurs frequently, especially in half-hour programs, and that female characters are most likely to use these types of aggression on television. A more detailed content analysis of indirect aggression on television was done by Coyne and Archer (2004), who analyzed 29 programs popular among British adolescents. They found that indirect aggression was present in 92% of the shows, with an average of 9.3 acts per hour.

There does not appear to be any research on the effects on children of viewing televised *verbal* aggression. The few existing studies on the effects of *indirect* aggression on British television have found that viewing indirect aggression is associated with both increased indirect aggression during a structured observation and peer reports of indirect aggression in preadolescent girls (Coyne & Archer, 2005; Coyne, Archer, & Eslea, 2004). No research exists, however, on the amount of televised indirect or verbal aggression in programs popular among children in the U.S, or the effects of these media portrayals on the behavior of children.

Although there is limited empirical research demonstrating associations between televised indirect or verbal aggression and viewer aggression, there is some evidence to suggest that physical aggression in the media may contribute to the development of these non-physical forms of aggression. A longitudinal study by Huesmann, Moise-Titus, Podolski, and Eron (2003) found that childhood exposure to media violence was associated with indirect aggression in adulthood for women. Other research suggests that exposure to violent media in preschool is associated with physical, verbal, and relational aggression in boys, and with verbal aggression in girls (Ostrov, Gentile, & Crick, 2006). These results suggest that the effects of televised aggression may not necessarily be type-specific. That is, viewing televised aggression (regardless of the type of aggression) may lead to a variety of aggressive behaviors. Therefore, although physical aggression is not as common among girls as it is among boys, girls' exposure to televised physical aggression may still contribute to their aggressive behavior. Additionally, viewing verbal and indirect aggression on television may be associated with a wide range of negative behaviors.

Several theories have been advanced and tested to predict and explain the effects of media violence on viewers. Most of the theories focus on slightly different types of effects or on different psychological mechanisms through which they have effects. Two of the most widely accepted theories of media effects guided the present research: social learning theory and script theory. Both describe how viewing violence can have specific effects as well as how those effects may generalize. Although neither was designed with televised verbal and indirect aggression in mind, there is no theoretical reason to believe that they would act differently from televised physical aggression. Social learning theory argues that children learn specific aggressive behaviors portrayed in the media through the process of observational learning (e.g., Bandura, Ross, & Ross, 1963a,b). Aggressive behaviors that are rewarded and enacted by attractive characters that the child identifies with are most likely to be learned and imitated (Potter, 1999). Therefore, just as children who view physical aggression on television have been shown to model these behaviors (Bandura et al., 1963a,b), it is likely that children who view high levels of indirect and verbal aggression will model these behaviors.

In addition to modeling, another process by which televised aggression influences viewer behavior is through the acquisition of aggressive attitudes, beliefs, and scripts. Specifically, children who watch violent media learn that aggression is normative, acceptable, and a useful way to solve social problems (Bushman & Huesmann, 2001). Viewers may also acquire scripts, cognitive associations that guide behavior, which are based on the aggressive content they are exposed to in the media (Huesmann, 1986, 1988, 1998). The regular rehearsal of these scripts through repeated viewing of aggression may lead to automatic aggressive responses to social situations. For example, a child may learn a script that one typical response to an insult is to respond aggressively. When insulted, the child relies on this script, as well as his or her own behavioral repertoire when making a response decision. When acting aggressively, it is more normative for boys to use physical aggression, whereas it is more normative for girls to use indirect or verbal aggression. Thus, a boy and girl could both learn the same script (i.e., insult → fight back), but they would choose different gender-normative modes of "fighting back." Therefore, it may be that viewing physical aggression has different effects on behavior for girls than for boys, although the underlying process is the same.

In summary, although the current television rating system was designed in part to alert parents to aggressive content, the ratings have questionable reliability and validity, and they do not consider the forms of aggression more commonly used by girls. This is of concern because both existing empirical research and theoretical perspectives suggest that all types of televised aggression can influence behavior. Of particular concern is the presence of aggression that is justified or rewarded. Therefore, research on the amount, type, and context of televised aggression in programs with varying ratings is needed, as well as research on the effects of these media portrayals on children's aggression, especially in girls.

The current study examined the amount and context of indirect, verbal, and physical aggression by age-based and content ratings in a sample of television programs popular among fifth grade girls; it also explored whether exposure to media aggression was associated with aggressive behaviors. We chose to study fifth graders because middle childhood is a critical time for learning group norms of behavior and how to fit into a peer group (Gentile & Sesma, 2003). Therefore, we hypothesized that media portrayals of characters interacting with each other in aggressive ways might have their greatest effect on peer behaviors at this age.

The first goal was to examine whether the age-based ratings and the aggression content descriptors (V and FV) correspond to the amount of indirect, verbal, and physical aggression present in the programs. If the age-based ratings are valid, there should be less physical aggression in programs rated as appropriate for children (e.g., TV-Y, TV-Y7) than in programs for general audiences or older audiences (e.g., TV-G, TV-PG, and TV-14). In addition, programs that contain physical aggression should contain a Violence (V) or Fantasy Violence (FV) content descriptor. At the very least, there should be more physical aggression in programs that contain the V and FV content descriptors than in programs without these descriptors. Although the current ratings are not designed specifically to rate verbal and indirect aggression, if the ratings accurately reflect the appropriateness of content for children, programs rated as appropriate for children (e.g., TV-Y, TV-Y7) should contain less indirect and verbal aggression than programs for general audiences (e.g., TV-G, TV-PG, and TV-14).

The second goal was to examine whether the context of the aggression varied by age rating. Specifically, we examined whether justified or rewarded aggression (i.e., high-risk aggression for children) would be less prevalent in programs rated as appropriate for children than in programs for general audiences.

The third goal was to evaluate evidence for the importance of the addition of indirect and verbal aggression to the television rating system, by examining associations between exposure to indirect, verbal, and physical aggression on television and teacher

reports of child behavior. We hypothesized that exposure to televised physical aggression would be associated with increased physical aggression, exposure to televised verbal aggression would be associated with increased verbal aggression, and exposure to televised indirect aggression would be associated with increased indirect aggression. Based on past research (e.g., Anderson, Gentile, & Buckley, 2007), we hypothesized that physically aggressive television exposure would also be associated with decreased prosocial behavior. We also tested for the possibility that the effects of televised physical aggression might generalize to other types of aggression, that is, that there might be associations between physically aggressive media exposure and both verbal and indirect aggression in girls. Finally, we expected that exposure to high-risk aggression (i.e., aggression that is rewarded or justified) would be a unique predictor of child behavior, above and beyond any variance accounted for by total television aggression exposure.

2. Method

2.1. Participants

Ninety-nine fifth-grade girls from three rural Northwestern elementary schools participated in the study. Schools were moderate in size (400–550 students), and 48% of students in the participating schools qualified for the federal free or reduced lunch program. Participants were aged 10 or 11 ($M = 10.6$, $SD = .50$). Seventy-six percent of the participants classified themselves as Caucasian, 16.5% Hispanic, and 7.5% as other ethnicities (African American, Asian, Native American, or other).

2.2. Procedures

All fifth-grade girls in the three schools were invited to participate. The first author visited each classroom, described the study, and distributed parental consent forms (in either English or Spanish, as needed). The overall consent rate was approximately 70%.

Participants completed several questionnaires in a group setting, including a questionnaire that assessed favorite television programs and frequency of viewing. Each group administration was conducted in a classroom setting during the school day, was led by the research team, and was approximately 1½ h. In addition, teachers (8 females, 2 males) completed a questionnaire for each of the participating students.

2.3. Measures

2.3.1. Teacher ratings of child behavior

Teachers reported on participants' behavior using an adaptation of the Children's Social Behavior Scale (Crick, 1996). The original scale consists of 13 items and 3 subscales: relational aggression (5 items), physical aggression (4 items), and prosocial behavior (4 items). A verbal aggression scale (4 items) was added for use in the current study. Although all of the items on the relational aggression subscale could be classified as indirect aggression according to the definition of this term used in the current study, the term *relational aggression* was retained in accordance with the conceptualization of these behaviors by Crick (1996). Items were rated on a 5-point Likert-type scale (1 = "never true" to 5 = "almost always true"). Sample items include: "This child spreads rumors or gossips about some peers" (relational aggression), "This child hits or kicks peers" (physical aggression), "This child tries to cheer up peers when they are upset or sad about something" (prosocial behavior), and "This child calls other peers names" (verbal aggression). Scale scores were formed by computing a mean of all items included in the scale. All of the scales had high internal reliability, with Cronbach's alpha's ranging from .90 (verbal aggression) to .93 (relational aggression).

2.3.2. Selection of television programs

A media habits questionnaire asked each participant to name her three favorite television programs and how frequently each program was viewed, using a 5-point Likert-type scale (1 = "I almost never watch this show," 5 = "Almost every day"). Of 294 total responses, 33 responses were excluded because they were in error (viz., 12 were names of television networks and 10 were films) or were Spanish television programs ($n = 11$). The remaining list included 108 different television programs. Of these, 32 were omitted because they were no longer on the air at the time of coding ($n = 22$), they were only available through satellite service ($n = 9$), or did not have an industry rating ($n = 1$). The final list included 76 different television programs nominated as favorite programs by fifth grade girls. A majority of the programs were rated TV-PG ($n = 27$), but also included were programs rated as TV-G ($n = 16$), TV-Y7 ($n = 14$), TV-14 ($n = 13$), and TV-Y ($n = 6$). A list of all programs by age-based rating and their aggression content descriptors for the episodes coded can be seen in the Appendix.

2.3.3. Aggression coding system

2.3.3.1. Coding. One hour of programming of each of the 76 nominated programs was recorded and content-analyzed for indirect, physical, and verbal aggression. A modified version of Coyne and Archer's (2004) aggression coding system was employed by coders. Behaviors in which harm was intended were coded as acts of aggression. For each aggressive act, the type of aggression (physical, verbal, indirect) was recorded, as well as two contextual variables: whether the act was justified and whether it was rewarded. Every program was coded by a primary coder. Each program was also coded by one of seven trained research assistants. If there were any disagreements in initial coding, the two coders discussed any disagreements until consensus was reached. No reliability estimates were calculated because a consensus procedure was used, requiring 100% agreement among coders.

2.3.3.2. Type of aggression. Aggressive acts were classified as physical aggression (including 26 distinct behaviors), indirect aggression (30 behaviors), or verbal aggression (5 behaviors). Physical aggression was defined as attempts to harm physically or threaten to harm someone or their possessions. Example behaviors include, “Hitting or punching with a closed fist,” “Threatening with a weapon,” and “Destroying someone’s property in front of them.” Indirect aggression was defined as attempts to harm another person’s reputation, social status, or relationships, or the use of a relationship to manipulate or cause harm. Examples of behaviors include “Trying to break up someone else’s relationship,” “Intentionally embarrass/humiliate around others,” and “Pretend to be hurt or angry to make someone feel bad.” Verbal aggression was defined as direct attempts to hurt someone’s feelings using words or gestures. Example behaviors include, “Teasing,” “Calling a mean name,” and “Imitate to face.”

2.3.3.3. Definition of acts. Aggressive acts were segmented by whether it was an “uninterrupted act” in the program. Interruptions included scene changes, or other characters speaking or acting. Subsequent aggression after the interruption was coded as a separate act of aggression. Simultaneous acts of aggression were both coded separately. For example, if a character yelled “You’re a jerk!” while shooting at another character, both a physical and verbal aggressive act would be coded.

2.3.3.4. Justification and reward. Aggressive acts were coded as *justified* if they were portrayed as motivated by self-defense or as necessary to gain a greater good (e.g., to maintain law and order). For example, aggressive acts against evil or villainous characters were coded as justified. Aggressive acts were coded as *rewarded* if the aggressor gained something positive as a result of the aggression. Rewards were coded whether they were immediate or delayed. If an aggressive act resulted in multiple rewards, each reward was coded separately.

2.3.4. Television aggression exposure variables

The content analysis data were used to compute indirect aggression exposure, verbal aggression exposure, and physical aggression exposure variables for all participants for whom content analysis data was available for at least one favorite program ($n = 90$). For the majority of participants ($n = 50$), data were available for all three of their favorite programs. For the remainder of the participants, data were available for two ($n = 31$) or one ($n = 9$) of their favorite programs. To create aggression exposure variables, the amount of aggression in each favorite program was multiplied by children’s frequency of viewing each program, and the mean of these products across favorite programs was calculated for each child. Variables for exposure to justified and rewarded aggression were computed using the same procedure.

3. Results

3.1. Overview of analyses

The first set of analyses compares the content analysis of the 76 television programs and the industry ratings of those programs. Descriptive statistics for the amount of aggression by rating category are presented, followed by analyses reporting on differences in the amount of total and high-risk aggression by type of rating. The second set of analyses compares the types of programs children view and teacher reports of child behavior. Descriptive statistics for the amount and type of television aggression exposure and teacher reports of child behavior are presented, followed by analyses of associations between aggression exposure and behavior.

3.2. Amount and type of aggression in programs

3.2.1. Descriptive statistics

Table 1 displays the amount of indirect, verbal, and physical aggression per hour in the television programs overall, separately for general audience and children’s programs, and by age-based rating category. Overall, physical aggression was most common, followed by indirect and verbal aggression, but the relative amounts of each type of aggression varied by age-based rating category. For all variables, there was substantial variability, both overall and across type of programming.

3.2.2. Physical aggression and television ratings

In order to test whether there is less physical aggression in programs rated as appropriate for children than in programs for general audiences, a t test was conducted comparing TV-Y and TV-Y7 programs ($n = 20$) with TV-G, TV-PG, and TV-14 programs ($n = 56$) on amount of physical aggression. Due to the skew of the distribution for physical aggression, the variable was normalized using a square root transformation, and this transformed variable was used in subsequent analyses. Results indicated that there was significantly more physical aggression in children’s programs than in general audience programs ($t(24.76) = 2.49, p < .05$). In order to further explore this finding, an analysis of variance (ANOVA) was conducted comparing all age-based rating categories (TV-Y, TV-Y7, TV-G, TV-PG, and TV-14) on physical aggression. The overall test was significant, ($F(4, 71) = 5.53, p < .001$), and LSD post-hoc tests indicated that TV-Y7 programs contained significantly higher amounts of physical aggression than all other age-based rating categories ($p < .05$).

To examine the validity of the aggression content descriptors (V and FV), all programs containing at least one act of physical aggression ($n = 55$) were examined. Of these programs, 67% did not contain a V or FV rating. Of the programs that contained physical aggression yet no aggression content descriptor ($n = 37$), the number of physical aggression acts per hour ranged from 1–53. Twenty-eight programs (76%) contained 1–5 acts of physical aggression, three programs (8%) contained 5–10 acts, and six programs (16%) contained more than 10 acts.

Table 1

Mean, SD, and range of indirect, verbal, and physical aggression acts per hour in television programs, overall, for general audience and children's programs¹, and by age-based rating category

	All programs (n = 76)	Children's programs (n = 20)	General audience programs (n = 56)	TV-Y (n = 6)	TV-Y7 (n = 14)	TV-G (n = 16)	TV-PG (n = 27)	TV-14 (n = 13)
Indirect								
M	3.72	4.10	3.59	4.00	4.14	3.44	3.44	4.08
SD	3.55	3.75	3.50	4.56	3.55	3.27	3.00	4.79
Range	0–18	0–12	0–18	1–12	0–10	0–10	0–10	0–18
Verbal								
M	2.80	2.85	2.78	2.83	2.86	1.31	2.15	5.92
SD	4.52	2.39	4.76	2.14	2.57	1.40	2.33	8.67
Range	0–32	0–8	0–32	0–5	0–8	0–4	0–7	0–32
Physical								
M	9.72	19.40 ^a	6.27 ^b	3.50 ^b	26.21 ^a	5.37 ^b	5.41 ^b	9.15 ^b
SD	17.17	26.52	10.64	5.75	29.14	13.29	8.44	11.47
Range	0–111	0–111	0–53	0–15	0–111	0–53	0–26	0–37

¹ Children's programs = TV-Y, TV-Y7, General audience programs = TV-G, TV-PG, TV-14.

Note. For general audience and children's programs, means with different superscripts differ from each other significantly at $p < .05$ in t -tests of independent groups. For age-based rating categories, means with different superscripts differ significantly at $p < .05$ in an LSD post hoc test.

In order to test whether programs with aggression content descriptors contain more physical aggression than programs without these descriptors, a t test compared programs with V or FV content descriptors ($n = 18$) with programs without these descriptors ($n = 58$) on amount of physical aggression. Programs with V or FV content descriptors had significantly higher amounts of physical aggression ($M = 27.72$, $SD = 24.80$) than programs without these descriptors ($M = 4.14$, $SD = 8.42$; $t(74) = -7.58$, $p < .001$). Because many programs without an aggression content descriptor also contained physical aggression, an additional analysis was conducted to examine the level of physical aggression in programs without a V or FV rating. A one-sample t test indicated that the mean number of physically aggressive acts in programs that did not have a V or FV rating ($M = 4.07$, $SD = 8.36$) was significantly greater than zero ($t(58) = 3.74$, $p < .001$).

3.2.3. Indirect and verbal aggression and age-based ratings

To test whether there is less indirect and verbal aggression in programs rated as appropriate for children than in programs for general audiences, a t test compared TV-Y and TV-Y7 programs with TV-G, TV-PG, and TV-14 programs on amount of indirect and verbal aggression. Due to the skew of the distributions for indirect and verbal aggression, these variables were normalized using a square root transformation. There were no significant differences in either indirect or verbal aggression between children's and general audience programs.

3.2.4. High-risk aggression and age-based ratings

Aggression was coded as justified or rewarded, allowing for an examination of high-risk aggressive content. Proportions of high-risk aggression were calculated by dividing the number of rewarded or justified acts by the total number of aggressive acts. Table 2 presents the proportions of justified and rewarded aggression per hour overall, separately for general audience and children's programs, and by age-based rating category. An ANOVA was conducted comparing children's and general audience programs on proportions of justified and rewarded indirect, verbal, and physical aggression. There was significantly more justified verbal aggression in children's programs than in general audience programs ($F(1, 51) = 8.27$, $p < .01$). There were no significant differences for any other high-risk aggression variables. A follow-up ANOVA was conducted comparing all age-based rating categories on justified verbal aggression. The ANOVA was significant ($F(4, 48) = 3.10$, $p < .05$). LSD post-hoc tests indicated that TV-Y programs contained significantly more justified verbal aggression than all other age-based categories except TV-Y7 ($p < .01$).

3.3. Associations between television aggression exposure and behavior

3.3.1. Descriptive statistics

Table 3 displays the descriptive statistics for the television aggression exposure variables, as well as for teacher reports of child relational aggression, verbal aggression, and physical aggression. There was adequate variability on all variables, with the exception of a somewhat restricted range for justified indirect and justified verbal aggression. Verbal aggression exposure was moderately correlated with indirect aggression exposure ($r = .40$, $p < .001$) and physical aggression exposure ($r = .42$, $p < .001$), but the correlation between indirect aggression exposure and physical aggression exposure was not significant.

3.3.2. Associations between television aggression exposure and child behavior

Pearson correlation coefficients were computed between indirect aggression exposure, verbal aggression exposure, and physical aggression exposure and teacher reports of child relational aggression, verbal aggression, physical aggression, and prosocial behavior. These correlations are displayed in Table 4. Verbal aggression exposure was positively correlated with child

Table 2

Proportion (mean, *SD*, and range) of justified and rewarded indirect, verbal, and physical aggression acts per hour in television programs, overall, in general audience and children's programs¹, and by age-based rating category

	All programs	Children's programs	General audience programs	TV-Y	TV-Y7	TV-G	TV-PG	TV-14
Justified indirect								
<i>M</i>	.05	.07	.05	.07	.07	.08	.06	.00
<i>SD</i>	.16	.11	.18	.11	.12	.17	.23	.00
Range	0–1.00	0–.33	0–1.00	0–.25	0–.33	0–.50	0–1.00	.00–.00
Justified verbal								
<i>M</i>	.04	.11 ^a	.02 ^b	.19 ^a	.08	.00 ^b	.01 ^b	.03 ^b
<i>SD</i>	.12	.19	.07	.21	.17	.00	.06	.10
Range	0–.50	0–.50	0–.33	0–.50	0–.50	0	0–.25	0–.33
Justified physical								
<i>M</i>	.18	.15	.20	.00	.20	.29	.12	.23
<i>SD</i>	.25	.19	.27	.00	.19	.35	.18	.30
Range	0–1.00	0–.52	0–1.00	0	0–.52	0–1.00	0–.56	0–1.00
Rewarded indirect								
<i>M</i>	.34	.39	.32	.38	.39	.30	.38	.21
<i>SD</i>	.32	.33	.31	.37	.33	.33	.35	.18
Range	0–1.00	0–1.00	0–1.00	0–1.00	0–1.00	0–1.00	0–1.00	0–.50
Rewarded verbal								
<i>M</i>	.23	.20	.25	.31	.14	.28	.32	.10
<i>SD</i>	.36	.29	.38	.24	.31	.44	.42	.24
Range	0–1.00	0–1.00	0–1.00	0–.60	0–1.00	0–1.00	0–1.00	0–.78
Rewarded physical								
<i>M</i>	.31	.31	.32	.58	.22	.25	.35	.33
<i>SD</i>	.33	.33	.33	.50	.21	.33	.35	.31
Range	0–1.0	0–1.00	0–1.00	0–1.00	0–.67	0–1.00	0–1.00	0–1.00

¹Children's programs = TV-Y, TV-Y7, General audience programs = TV-G, TV-PG, TV-14.

Note. Proportions calculated only for programs that contained at least one act of indirect ($n = 59$), verbal ($n = 53$), or physical ($n = 55$) aggression. For general audience and children's programs, means with different superscripts differ from each other significantly at $p < .01$ in an ANOVA of independent groups. For age-based rating categories, means with different superscripts differ significantly at $p < .01$ in an LSD post-hoc test.

verbal aggression, and physical aggression exposure was positively correlated with child relational aggression, verbal aggression, and physical aggression. In addition, physical aggression exposure was negatively correlated with child prosocial behavior.

3.3.3. High-risk aggression and child behavior

To examine whether exposure to rewarded or justified aggression would contribute unique variance in the prediction of child behavior, a series of hierarchical multiple regressions were conducted with indices of child behavior as the dependent variables. In each regression, total aggression exposure was entered in Step 1 and justified and rewarded aggression was entered in Step 2. Results for all significant regressions can be seen in Table 5.

The regressions predicting relational aggression and verbal aggression were both significant, and the high-risk aggression exposure contributed unique variance in the prediction of both types of aggression. Specifically, rewarded indirect aggression exposure was positively associated with relational aggression and rewarded verbal aggression exposure was positively associated with verbal aggression. In the regression predicting physical aggression, although physical aggression exposure was a significant

Table 3

Descriptive statistics for television aggression exposure and child behavior

	<i>M</i>	<i>SD</i>	Range
Total aggression exposure ($n = 90$)			
Indirect	14.49	9.81	0–45
Verbal	9.41	7.83	0–40
Physical	27.77	55.47	0–325.50
Justified aggression exposure ($n = 90$)			
Indirect	.96	1.59	0–7.50
Verbal	.89	1.44	0–7.50
Physical	8.53	17.41	0–105.00
Rewarded aggression exposure ($n = 90$)			
Indirect	4.03	4.06	0–24.00
Verbal	3.52	6.29	0–45.00
Physical	6.41	9.36	0–45.00
Child behavior ($n = 99$)			
Relational aggression	2.26	1.00	1.00–5.00
Verbal aggression	1.62	.77	1.00–4.25
Physical aggression	1.16	.46	1.00–3.25
Prosocial behavior	4.06	.87	1.75–5.00

Table 4Correlations between indirect, verbal, and physical aggression television exposure and child behavior ($n = 90$)

	Relational aggression	Verbal aggression	Physical aggression	Prosocial behavior
Indirect aggression exposure	-.01	-.02	-.07	-.06
Verbal aggression exposure	.16	.28**	.14	-.15
Physical aggression exposure	.21*	.38**	.25*	-.29**

* $p < .05$, ** $p < .01$.**Table 5**Hierarchical multiple regression analyses predicting relational aggression, verbal aggression, and prosocial behavior ($n = 90$)

	<i>B</i>	<i>SEB</i>	β	R^2	ΔR^2
Relational aggression					
Step 1				.00	
Indirect aggression exposure	-.00	.01	-.01		
Step 2				.10*	.10*
Justified indirect aggression exposure	-.03	.07	-.05		
Rewarded indirect aggression exposure	.12	.04	.49**		
Verbal aggression					
Step 1				.08**	
Verbal aggression exposure	.03	.01	.28**		
Step 2				.14**	.06*
Justified verbal aggression exposure	.00	.07	.01		
Rewarded verbal aggression exposure	.04	.02	.29*		
Prosocial behavior					
Step 1				.09**	
Physical aggression exposure	-.00	.00	-.29**		
Step 2				.12**	.04
Justified physical aggression exposure	.03	.03	.49		
Rewarded physical aggression exposure	-.04	.02	-.47		

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

predictor of physical aggression, high-risk physical aggression did not predict additional variance and the overall model was not significant. Finally, the regression predicting prosocial behavior was significant, but high-risk aggression exposure did not contribute unique variance beyond the variance accounted for by physical aggression exposure.

4. Discussion

The current study examined the validity of the television rating system for assessing aggressive content in programs viewed by young girls and explored associations between exposure to television aggression and behavior. The results suggest that the television rating system has poor validity with respect to the amount of aggressive content in programs popular among young girls. Overall, the age-based ratings did not reflect the amount of total or high-risk indirect, verbal, or physical aggression present in programs. In fact, programs rated as appropriate for children contained higher levels of some types of aggression than programs for general audiences. In addition, although programs with the V and FV content descriptors contained higher levels of physical aggression than programs without these descriptors, the content descriptors did not distinguish programs that contained acts of aggression from those that did not. This study also found associations between exposure to televised aggression and aggressive and prosocial behavior in girls. These associations were not limited to televised physical aggression, but also included associations with televised verbal aggression and televised rewarded indirect aggression.

Our first goal was to examine whether the age-based ratings and the V and FV content descriptors correspond to the amount of indirect, verbal, and physical aggression present in programs popular among fifth grade girls. Results indicated that there are higher levels of physical aggression in children's programs than in programs for general audiences. Specifically, TV-Y7 programs contained the highest level of physical aggression, with nearly three times as much physical aggression as the category with the next highest level of physical aggression (TV-14). These findings are particularly surprising given that the ratings system was designed to allow parents to identify programs with potentially harmful content for children, especially physically aggressive content.

The majority of the TV-Y7 programs analyzed in this study were cartoons, and therefore it may be that the television industry discounts the aggression present in these types of programs when assigning age-based ratings. In fact, the creation of the FV (fantasy violence) content descriptor for exclusive use with TV-Y7 programs reflects this distinction of animated violence from non-animated violence by the television industry. There are several potential difficulties raised by this. First, many parents do not understand the FV label, with only 12% of parents knowing what it means and an almost equal percentage (8%) mistakenly believing it stands for "Family Viewing" (Rideout, 2004). Second, labeling the violence as "fantasy," seems to diminish its

importance, perhaps causing parents to believe that animated or fantasy violence is somehow acceptable; yet there is ample evidence that animated, sanitized, and “fantasy” violence has an effect on children (Anderson et al., 2003; Kirsh, 2006; Strasburger & Wilson, 2003). For example, research on the effects of violent video games (which are all animated), indicates that they have the same effects on children's aggressive thoughts, feelings, and behaviors that violent TV shows have demonstrated (e.g., Anderson, 2004). In fact, even cartoonish children's games increase aggression (Anderson et al., 2007). Therefore, labeling certain types of media violence as “fantasy” violence is misleading and may actually serve to increase children's access to harmful violent content by reducing parental concern.

Results also indicated that there are not significantly different amounts of indirect and verbal aggression in general audience programs compared to children's programs. It was expected that programs rated as appropriate for children would contain lower levels of these types of aggressive behaviors relative to programs geared for general audiences, but this was not the case. It may be that indirect and verbal aggression are not considered by the television industry when assigning age-based ratings due to beliefs that these behaviors are not truly “aggression” and are normal and harmless in “real life” (e.g., Hazler, Miller, Carney, & Green, 2001; Werner, Senich, & Przepyszny, 2006) and therefore are not inappropriate for children. Nonetheless, there is extensive research documenting the deleterious effects of indirect and verbal aggression (for reviews, see Crick et al., 1999; Swearer, Grills, Haye, & Cary, 2004), and researchers have argued for the importance of inclusion of non-physical means of harm in definitions of aggression (e.g., Archer & Coyne, 2005; Crick & Grotpeter, 1995). Additionally, this study and other recent research indicates that exposure to indirect aggression is associated with negative behaviors in adolescent girls (Coyne & Archer, 2005). The exclusion of non-physical forms of aggression in the current age-based rating system signals a lack of attention or understanding by the television industry to standard definitions of aggression, which generally focus on the intent of one person or character to harm another person through physical, verbal, or other means (Anderson et al., 2003). Therefore, the current age-based ratings appear to have limited usefulness for parents who want to limit their children's exposure to aggressive content.

An examination of the aggression content descriptors used by the television industry revealed only slightly better validity than the age-based ratings. Programs with the V and FV content descriptors had significantly higher levels of physical aggression than programs without these descriptors; however, aggression content descriptors were not useful in identifying which programs contained any physical aggression. A majority of programs (67%) that contained physical aggression did not contain a V or FV content descriptor, and the amount of physical aggression in programs that did not contain an aggression content descriptor was significantly greater than zero. Especially alarming was one program in this sample without an aggression content descriptor that contained 53 acts of physical aggression in 1 h. These results indicate that although the V and FV ratings may alert parents to programs that on average contain higher levels of physical aggression than other programs, they are not adequate in identifying which shows contain physical aggression and which do not.

The second goal was to examine whether justified or rewarded aggression (i.e., high-risk aggression for children) would vary by age-based rating. It was hypothesized that high-risk aggression would be less prevalent in programs rated as appropriate for children than in programs for general audiences. In contrast, results indicated that there were no differences between these two types of programming on any high-risk aggression variables, with the exception that there was actually a higher proportion of justified verbal aggression in children's programs than in general audience programs. Furthermore, there was a significantly higher proportion of justified verbal aggression in TV-Y programs than in all other categories except TV-Y7, with 21% of verbal acts in TV-Y portrayed as justified. According to the ratings system, TV-Y programs are not only appropriate for all children, but are “specifically designed for a very young audience, including children ages 2–6” (FCC, 2003). Given the research documenting that children are more likely to imitate justified aggression (Potter, 1999), this finding is particularly alarming.

The third goal was to examine associations between exposure to televised indirect, verbal, and physical aggression and child behavior, in order to provide evidence for or against the importance of including all forms of aggression in the television rating system. To our knowledge, this study was the first to find associations between viewing verbal aggression on television and children's own verbal aggression. In addition, the effects of televised physical aggression were extensive, such that exposure to televised physical aggression was associated with a variety of negative behaviors in girls. Exposure to televised physical aggression was positively associated with relational, verbal and physical aggression and negatively associated with prosocial behavior in girls. It is important to note that the data on girls' viewing physically aggressive TV shows is skewed. Very few girls watch a high amount of physically aggressive shows. We did not remove these “outlying” girls because this would inappropriately obscure an ecologically valid finding – very few girls watch a lot of high physically aggressive TV, but those few who do also tend to be the most aggressive themselves. This skew also explains why high risk violent content did not significantly predict prosocial behavior despite large beta coefficients.

The broader effects of televised physical aggression on behavior relative to effects of televised non-physical forms of aggression may be due to the fact that there was a higher prevalence of physical aggression than verbal or indirect aggression on average across all types of programs. Additionally, due to its graphic nature, physical aggression may be more salient to viewers than indirect aggression, which is often subtle and may require more cognitive sophistication to detect. The size of the effects here are very similar to those found in most other studies of media violence effects (Anderson et al., 2007; Comstock & Scharrer, 2003; Gentile, Saleem, & Anderson, 2007). Although effect sizes between .1 and .3 are typically considered “small” to “moderate” by convention (Cohen, 1988), these are not trivial. Because aggression is multi-causal, they are as large as or larger than most other risk factors for aggression (Comstock & Scharrer). In fact, they are larger than many other public health risk factors, such as the effects of a daily aspirin preventing heart attacks or lead exposure and decreased IQ (Gentile et al., 2007).

These findings are consistent with both social learning theory and script theory, which suggest that the effects of aggressive media exposure include imitation of specific aggressive acts, as well as the acquisition of aggressive beliefs and scripts. Girls who watch

television portrayals of verbal and physical aggression may learn specific behaviors (such as a new insult or “slam”) which they subsequently use in social interactions. They may also acquire well-rehearsed and automatic aggressive scripts, based on what they view. Because physical aggression is non-normative for girls (Crick & Grotpeter, 1995), generalized aggressive scripts that develop as a result of viewing physical aggression may be enacted using more gender-normative forms of aggression, such as relational or verbal aggression.

The final goal was to examine associations between exposure to high-risk (i.e., justified or rewarded) aggression and child behavior. Because children are more likely to imitate justified or rewarded aggression, it was hypothesized that exposure to these portrayals of aggression on television would be a unique predictor of child behavior, beyond the total amount of aggression viewed. This hypothesis was partially supported. Exposure to high-risk physical aggression contributed additional variance in the prediction of prosocial behavior, after controlling for total aggression exposure, but did not explain additional variance in physically aggressive behavior. Rewarded verbal aggression contributed additional variance in the prediction of verbal aggression, after controlling for total verbal aggression exposure, and rewarded indirect aggression was a significant predictor of relational aggression, after controlling for total indirect aggression exposure. This latter finding is of particular interest given that total indirect aggression exposure was not associated with girls' relational aggression.

These findings suggest that the context in which aggression is portrayed on television moderates associations with behavior, especially for non-physical forms of aggression. Regardless of whether physical aggression is rewarded or justified, exposure to televised physical aggression is associated with physical, verbal, and indirect aggressive behaviors in girls, as well as lower prosocial behavior. This may be due to the fact that a large proportion of the acts of physical aggression in the programs were justified or rewarded relative to verbal and indirect acts, and therefore much of the physical aggression in this sample was considered high risk. In contrast, however, there was evidence that the context of televised indirect and verbal aggression may be an important determinant of its effects on the viewer. Because verbal and indirect forms of aggression are considered more normative and the consequences of such acts may be more subtle than the consequences of physical aggression, viewers may especially rely on the contextual features of the acts when incorporating these behaviors into their aggressive scripts. We hope that this hypothesis spurs further research on this issue.

The current study had several methodological strengths that enhance the validity of the findings. First, a detailed content analysis was used to measure aggressive television content, rather than a reliance on participant ratings. Although there is some evidence that children are fairly accurate reporters of global levels of physical aggression in the media they consume, they are much less accurate in estimating levels of verbal and indirect aggression in the media (Lyle, Dyson, Moriarty, & Linder, 2007) and are likely unable to estimate rates of high-risk aggression. Second, the television programs included in the analysis were nominated as favorites by the same children for whom we had behavioral ratings, allowing more precise estimations of associations between media exposure and behavior than studies that utilize programs popular with the general public (e.g., use of Nielsen ratings) to calculate such associations. Third, teacher reports of child aggressive and prosocial behavior may be more valid than self-reports, which may be subject to social desirability biases.

The study is limited by its correlational design. We do not make any claims from these data about causal relations, although these data are consistent with causal theories. It is likely that children who are more aggressive seek out shows that include aggression, and that these shows further increase their aggressive tendencies – a pattern that has been called a “downward spiral” with regard to physical aggression and media violence (Slater, Henry, Swaim, & Anderson, 2003). In addition, it is possible that other variables may moderate the associations found here, such as parent involvement in children's media habits. For example, Anderson et al. (2007) found that parental limits on the amount and content of children's media viewing reduces the effects of violence on subsequent aggressive behavior. It is certainly likely that the overall patterns shown here are moderated by variables not measured in this study. An additional limitation is the use of teacher ratings of aggression. Specifically, due to the covert nature of relational aggression, teachers may have difficulty detecting, and therefore reporting, participants' relational aggression. Nevertheless, this method is preferable to self-reports, which often do not correspond to others' reports, and teachers may be more aware than children of indirect forms of aggression (Crick et al., 1999). Future research should also utilize peer reports or observational measures of aggression, which may be most reliable in this age group. Finally, the study is limited by its use of girls as the subject population; however, as we were particularly interested in non-physical forms of aggression, it was important to focus on girls for whom these types of behaviors are more normative. Future studies should focus on both boys and girls because there may be important differences in the relation between the types of shows they watch and their behaviors. Furthermore, both experimental and longitudinal studies are needed that focus on the effects of exposure to televised verbal and indirect aggression.

The findings of the current study demonstrate that the existing television rating system has poor validity with respect to aggressive content. Neither the age-based ratings nor the aggression content descriptors assigned by the television industry accurately reflect the presence or amount of aggression in programs popular among young girls. These results are some of the first to document associations between exposure to televised indirect and verbal aggression and these same behaviors in girls. Because the current rating system does not appear to consider non-physical forms of aggression, it does not reflect current psychological definitions of aggression or existing research on media effects, and therefore may be inadequate in its goal of providing information to parents and caregivers to help them limit children's exposure to potentially harmful content.

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Appendix

Television programs analyzed

TV-Y (n = 6)		
Cyberchase	Lizzie McGuire	Rugrats
Fairly Odd Parents	Maya and Miguel	Sponge Bob Square Pants
TV-Y7 (n = 14)		
Avatar, the Last Airbender (FV)	Ed, Edd n Eddy	Totally Spies (FV)
Courage the Cowardly Dog	Endurance	Unfabulous
Danny Phantom (FV)	Pokémon (FV)	Yu-Gi-Oh (FV)
Digimon (FV)	Scoobydoo (FV)	Zoey 101
Dragonball Z (FV)	Ten Titans (FV)	
TV-G (n = 16)		
7th Heaven	I Love Lucy	Saddle Club
Boy Meets World	Kim Possible	Sister Sister
Brandy and Mr. Whiskers	Lassie	That's So Raven
Cosby Show, The	Lilo and Stitch	Suite Life of Zach and Cody, The
Full House	Price is Right, The	
Home Improvement	Proud Family	
TV-PG (n = 27)		
8 Simple Rules for Dating My Daughter	Fear Factor	Everybody Loves Raymond
American Idol	Fresh Prince of Bel-Air, The	Sabrina, the Teenaged Witch
Angel (V)	Friends	Seinfeld
Animal Cops	Hope and Faith	Simple Life, The
Bonanza	King of the Hill	Simpsons, The
Case Closed (V)	Malcolm in the Middle	Summerland
Charmed	MASH	Survivor
Family Feud	Mythbusters	O.C., The
FBI Files (V)	One on One	What I Like about You
TV-14 (n = 13)		
That 70's Show	Gilmore Girls	Smallville
Buffy the Vampire Slayer	Inuyasha (V)	Surreal Life, The
Cops (V)	Law and Order	Will and Grace
CSI: Crime Scene Investigation (V)	Lost	
Family Guy	Mad TV	

Note. V = violence, FV = fantasy violence.

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