

Industry Television Ratings for Violence, Sex, and Substance Use

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abstract

OBJECTIVE: To examine whether the industry-run television (TV) Parental Guidelines discriminate on violence, sexual behavior, alcohol use, and smoking in TV shows, to assess their usefulness for parents.

METHODS: Seventeen TV shows (323 episodes and 9214 episode minutes) across several TV show rating categories (TVY7, TVPG, TV14, and TVMA) were evaluated. We content-coded the episodes, recording seconds of each risk behavior, and we rated the salience of violence in each one. Multilevel models were used to test for associations between TV rating categories and prevalence of risk behaviors across and within episodes or salience of violence.

RESULTS: Every show had at least 1 risk behavior. Violence was pervasive, occurring in 70% of episodes overall and for 2.3 seconds per episode minute. Alcohol was also common (58% of shows, 2.3 seconds per minute), followed by sex (53% of episodes, 0.26 seconds per minute), and smoking (31% of shows, 0.54 seconds per minute). TV Parental Guidelines did not discriminate prevalence estimates of TV episode violence. Although TV-Y7 shows had significantly less substance use, other categories were poor at discriminating substance use, which was as common in TV-14 as TV-MA shows. Sex and gory violence were the only behaviors demonstrating a graded increase in prevalence and salience for older-child rating categories.

CONCLUSIONS: TV Parental Guidelines ratings were ineffective in discriminating shows for 3 out of 4 behaviors studied. Even in shows rated for children as young as 7 years, violence was prevalent, prominent, and salient. TV ratings were most effective for identification of sexual behavior and gory violence.



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WHAT'S KNOWN ON THIS SUBJECT: A voluntary, industry-run TV Parental Guidelines rating system has existed for 20 years to help parents decide which shows are appropriate for children; yet the usefulness of TV ratings in discriminating shows on risk-behavior depiction remains unclear.

WHAT THIS STUDY ADDS: Violence was prevalent across all shows, regardless of rating, so parents could not rely on TV Parental Guidelines to screen for this behavior. Only TV-7 consistently predicted lower levels of sex, alcohol, or tobacco, compared with TV-PG, TV-14, and TV-MA.

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Almost 20 years have passed since Congress approved the Telecommunications Act of 1996. In Section 551 (“Parental Choice in Television Programming”), Congress noted: (1) “television influences children’s perceptions of values and behavior common and acceptable in society;” (2) “television shows expose children to many depictions of violence;” (3) “children so exposed are prone to see violence as acceptable and have greater tendency for aggressive behavior;” (4) “casual treatment of sexual material on television erodes parental ability to develop responsible attitudes and behavior in their children;” (5) “parents express grave concern over violent and sexual programming;” and (6) “there is compelling governmental interest in empowering parents to limit these negative influences.”¹ Congress instructed the telecommunications industry to develop a television (TV) ratings system and TV manufacturers to integrate hardware (the V-chip) to allow parents to block objectionable content.

The TV industry responded that year with the TV Parental Guidelines, structured around a similar self-regulatory system previously developed for motion pictures. Shows are rated by the companies that produce them and classified into rating categories based on content and appropriateness for different age groups. The industry established a TV Parental Guidelines Monitoring Board to “ensure accuracy, uniformity, and consistency of the guidelines.”² The rating categories were integrated into programming to allow parents to see the rating for each show and to block by rating (or channel) using V-chip technology.

In the ensuing 20 years, research confirms the prescience of Congress’ expressed concerns. Studies have identified relations between viewing media violence and aggression in children.^{3,4} Prospective studies

have strengthened the notion that viewing sexual content on TV affects risky sexual behavior among adolescents and increases the risk of teen pregnancy.^{5,6} Moreover, studies have documented a robust relation between seeing depictions of smoking and drinking in movies and youth substance use.^{7–10} Subsequently, concerns about media effects on youth behavior appear even more justified by the science, and research suggests that parental guidelines should include behaviors beyond sex and violence, such as alcohol and tobacco use.¹¹

As stated in their own documentation, the TV industry recognized that the usefulness of the TV Parental Guidelines for informing parents would be based in part on their “accuracy, uniformity and consistency.”² In a literature search on “TV Parental Guidelines” we were able to identify studies that either examined, through content coding, the presence of various risk behaviors^{12–14} or how parents perceive and use the ratings system,^{15–17} but were surprised to find limited tests of its accuracy, uniformity, or consistency across risk behaviors. The present research is a first attempt to quantify violence, sex, and alcohol and tobacco use in a sample of TV programs according to the TV Parental Guideline rating category.

METHODS

We selected TV shows across 4 rating categories (ie, TV-Y7, TV-PG, TV-14, and TV-MA) as defined by the TV Parental Guidelines.² TV-Y7 is defined as being “directed to older children” (age 7 years and above). TV-PG is defined as “parental guidance suggested” and may “contain material that parents may find unsuitable for younger children.” TV-14 is denoted as “parents strongly cautioned,” as it is a program that “contains material that many parents would

find unsuitable for children under 14 years of age.” TV-MA is listed as “mature audience only,” because it is a program “specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.” Seven shows were purposively chosen because they were popular with youth (identified through the Nielsen list of shows most popular with youth aged 12–17 years), and 10 other shows were purposively chosen given the high likelihood of the presence of risk behaviors with the intent to maximize statistical power to find TV rating effects, if they existed. The 17 shows (154 hours across 323 episodes) with descriptions of air times, ratings, and episodes are provided in Table 1.

Experienced (>10 years of previous content-coding work) media coders screened episodes and digitally timed each of the 4 risk behaviors. Reliability across coders was conducted by double coding a random sample of 10% of the episodes, with κ estimates ranging from 0.72 to 0.94. The guidelines determined by the Dartmouth Visual Media Project for coding risk behaviors are described below. Concurrent depiction of a risk behavior by 2 or more characters in a scene was only timed once.

Violence

Violent behavior was defined as depiction of the use of force by people or anthropomorphized characters that physically harmed animate beings as well as any credible threat of physical force intended to harm animate beings. Violence had to be intentional and did not include accidental or unintentional physical contact. Visible physical consequences of violent acts immediately after acts of violence were timed as well (ie, someone bleeding after a stabbing). Sanctioned violence in sports contexts, with the exception of boxing and martial arts,

TABLE 1 Listing of TV Program Sample

Name	Air Times	Season	TV Rating	Years Sampled	No. of Episodes
Shows selected as most popular with youth based on Nielsen data					
Dirty Jobs	9:00 PM	3, 4	TV-14	2008–2009	25
Family Guy	After 8:00 PM	5, 6	TV-14	2006–2007	25
Fresh Prince of Bel Air	After 8:00 PM	4	TV-PG	1993–1994	26
SpongeBob SquarePants	2–7:00 PM	5	TV-Y7	2007–2008	40
The Fairly OddParents	7:00 AM and 2–7:00 PM	2	TV-Y7	2001–2002	25
South Park	After 9:00 PM	11	TV-MA	2007	14
Zoey 101	6–8:00 PM	4	TV-Y7	2008	12
Additional shows coded					
30 Rock	After 8:00 PM	4	TV-14	2009–2010	22
Burn Notice	After 9:00 PM	3	TV-PG	2009–2010	16
Californication	After 10:00 PM	3	TV-MA	2009	12
Desperate Housewives	After 9:00 PM	6	TV-14	2009–2010	23
Entourage	After 10:00 PM	6	TV-MA	2009	12
Friday Night Lights	After 9:00 PM	4	TV-PG	2009–2010	13
Madmen	After 10:00 PM	3	TV-14	2009	13
The Hills	After 10:00 PM	5	TV-PG	2009	20
True Blood	After 9:00 PM	2	TV-MA	2009	12
Weeds	After 10:00 PM	5	TV-MA	2009	13

TV-Y7: Directed to older children. These programs are designed for children age 7 and above. TV-PG: Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. TV-14: Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 y of age. TV-MA: Mature audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

was not coded as violence due to lack of intent to harm.

Global assessments of the salience (amount and centrality to the overall show) of violence in general and specific forms of violence (ie, interpersonal and gory violence) were provided for each episode on a 5-point Likert scale (“not at all salient” to “extremely salient”). An example of “minimally salient” would be a brief moment of violence (eg, 1 character slaps another character then walks away), whereas an example of “extremely salient” would be intense and/or prolonged scenes of violence (eg, ongoing war scenes involving multiple characters and significant consequences of violence, such as death or severe injury). Interpersonal violence included, but was not limited to, depictions of physical violence using one’s hands (eg, punching), violence enacted with a weapon, and threats (eg, pointing a gun in the face of a victim). Gory depictions were occurrences that showcased bloodshed.

Sex

Sexual behavior included romantic kissing, petting, and intercourse (actual or implied). Implied sex included scenes with sexual noises or visuals (eg, cars rocking or steaming windows) with clear indication of the sexual nature of the activity. Situations suggestive that sex had occurred in the past, but without media time dedicated to actual or implied sexual activity (eg, a couple leaving a bedroom but no explicit cues of sexual interaction) were not included.

Alcohol Use

Alcohol use was coded as actual or implied use of alcohol, including drinking, holding an alcoholic beverage, or making a drink. Implied use included scenes where alcohol was present and drinking was suggested even though not explicitly portrayed (eg, actors seated with a bottle of wine and filled wine glasses). Scenes implying past alcohol use (eg, alcohol paraphernalia, empty bottles/cans, empty glasses)

or mentions of alcohol were not included in alcohol timing.

Smoking

Smoking behaviors included actual smoking (ie, use or product handling) in the foreground or by characters and in the background. We did not time depictions of cigarette butts in ashtrays, “no smoking” signs and billboards, or mentions of smoking if there was no associated use of the product.

Statistical Analyses

The primary aim of statistical analysis was to examine risk-behavior depiction by rating category to determine the degree to which rating levels were associated with each behavior. Prevalence of risk behavior across shows or episodes was defined as the proportion of episodes that contained any instance of a given risk behavior. Prevalence within episodes was defined as the total seconds of risk behavior per minute of episode to account for differences in duration of episodes from each show. Given the hierarchical structure

of episodes nested within shows, we used multilevel models to properly account for the potential correlation among episodes within shows. We examined prevalence of risk behaviors across episodes using multilevel logistic regression, prevalence of risk behaviors within episodes using multilevel γ regression and a log link, and coder global ratings of the salience of different types of violence using multilevel Gaussian regression. For the multilevel γ regression, to manage the zeros in the dataset, data were transformed by adding "1" to each value for timed risk behavior. To test our main hypothesis, we entered show-rating category as a 3 degree of freedom fixed effect (3 dummy-coded contrasts) into the multilevel model and conducted both Wald and likelihood ratio tests to evaluate the significance of the main effect. For tests of fixed effects, models were run with TV-Y7 shows as the reference category then TV-MA shows as the reference category to confirm significant differences across show categories. All multilevel models were estimated in R using the LME4 package.^{18,19} Intraclass correlation values were examined across each baseline model to confirm the need for inclusion of random effects at the show level. The significance of random effects was tested through nested model comparisons with the likelihood ratio test, and all random effects included were significant at the $P < .05$ level.

RESULTS

Across 17 shows evaluated, 14 contained instances of smoking, sexual behavior, and alcohol use, and 16 contained some form of violence. Every show had at least 1 depiction of 1 type of risk behavior. Across all episodes and shows, ~4% of all airtime minutes presented depictions of violence and alcohol, whereas smoking and sexual behavior were

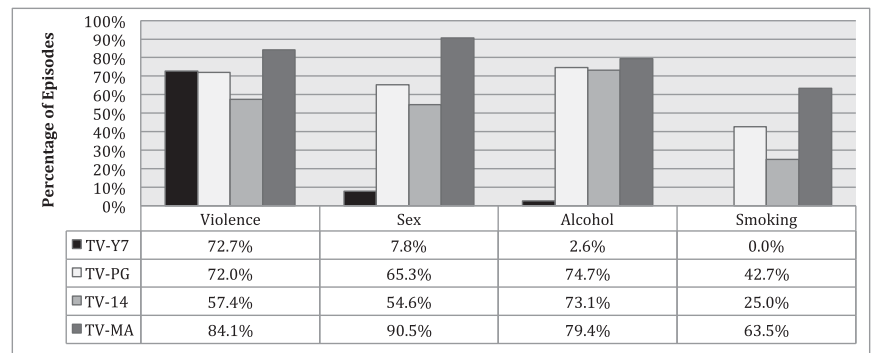


FIGURE 1

Proportion of TV episodes that contain ≥ 1 incidents of risk behavior by risk behavior type and TV parental guideline rating category. TV-Y7: Directed to older children. These programs are designed for children age 7 and above. TV-PG: Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. TV-14: Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 years of age. TV-MA: Mature audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

much less common, appearing in <1% of all airtime minutes.

Prevalence of Episodes With Any Depiction of a Risk Behavior by TV Rating

Violence was pervasive, occurring in 70% of episodes overall; the only show with no violence was *Dirty Jobs*. Sex was present in 53% of episodes. Alcohol was present in 58% of episodes overall, and smoking occurred less frequently than any other risk behavior (31% of episodes overall). Figure 1 shows percentages of show episodes with each type of risk behavior across rating categories. Sex, smoking, and alcohol were largely absent from TV-Y7 shows, but violence was present in 73% of TV-Y7 shows. Tests using multilevel logistic regression revealed that TV rating was not significantly associated with the prevalence of violence in episodes ($P = .285$). Although not statistically significant, there was a graded increase in the percent of shows that contained any depiction of sex ($P = .085$), with TV-MA episodes showing the highest prevalence and TV-PG/TV-14 being intermediate. The overall effect of TV rating was significant for alcohol models ($P < .001$), but TV rating category

did not distinguish the prevalence of alcohol beyond the TV-Y7 category. Percentages of episodes with smoking followed a similar trajectory, with significant effects for comparisons of TV-Y7 shows containing no smoking ($P < .001$) and TV-MA shows containing the most smoking ($P < .05$).

Prevalence of Each Risk Behavior Within Episode by TV Rating

There was large variation of within-show prevalence of risk behaviors (Table 2). *Burn Notice* (TV-PG) contained the highest mean for violence (9.5 seconds per minute), *Californication* (TV-MA) was highest for sexual behavior (1.5 seconds per minute) and alcohol use (7.2 seconds per minute), and *Mad Men* (TV-14) was highest for smoking (6.2 seconds per minute).

Figure 2 presents mean prevalence of risk behavior in seconds per episode minute by TV rating category. There was no statistically significant association between rating and level of violence ($P = .217$) and thus, individual rating categories were not examined for differences. A significant association was identified between ratings and levels of sexual behavior ($P < .001$), alcohol use ($P < .001$), and

TABLE 2 Amount of Timed Risk Behavior Within TV Shows (Seconds per Episode Minute)

Rating	Show Name	Seconds per Episode Minute			
		Violence Mean (SD)	Sex Mean (SD)	Smoking Mean (SD)	Alcohol Mean (SD)
TV-Y7	SpongeBob SquarePants	3.3 (5.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
	The Fairly OddParents	3.5 (4.5)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
	Zoey 101	0.6 (1.2)	0.1 (0.1)	0.0 (0.0)	0.0 (0.0)
	Total	2.9 (4.5)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
TV-PG	Burn Notice	9.5 (6.4)	0.0 (0.0)	1.4 (1.1)	3.2 (1.9)
	Friday Night Lights	0.5 (0.5)	0.2 (0.3)	0.2 (0.4)	2.0 (1.0)
	The Fresh Prince of Bel Air	0.7 (0.8)	0.2 (0.5)	0.3 (0.9)	1.0 (2.6)
	The Hills	0.1 (0.1)	0.1 (0.2)	0.1 (0.3)	4.4 (2.4)
	Total	2.4 (4.7)	0.2 (0.3)	0.5 (0.9)	2.5 (2.6)
TV-14	30 Rock	0.3 (0.6)	0.1 (0.2)	0.0 (0.2)	2.8 (2.8)
	Desperate Housewives	1.4 (2.0)	0.3 (0.3)	0.0 (0.0)	3.1 (2.9)
	Dirty Jobs	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
	Family Guy	2.9 (4.3)	0.3 (0.3)	0.8 (1.8)	4.2 (4.1)
	Madmen	0.1 (0.2)	0.5 (0.5)	6.2 (2.0)	6.5 (2.1)
	Total	2.4 (4.7)	0.2 (0.3)	0.5 (0.9)	2.5 (2.6)
TV-MA	Californication	1.4 (1.1)	1.5 (1.6)	1.3 (1.2)	7.2 (3.8)
	Entourage	0.1 (0.3)	0.5 (0.4)	0.2 (0.6)	3.6 (3.7)
	South Park	4.1 (3.0)	0.2 (0.5)	0.6 (1.2)	1.4 (2.7)
	True Blood	7.9 (5.4)	1.3 (1.1)	0.1 (0.2)	2.2 (1.4)
	Weeds	3.9 (4.0)	0.7 (1.0)	0.5 (0.6)	3.4 (2.6)
	Total	3.5 (4.2)	0.8 (1.1)	0.5 (0.9)	3.5 (3.5)
Total		2.3 (4.0)	0.3 (0.6)	0.5 (1.5)	2.3 (3.1)

TV-Y7: Directed to older children. These programs are designed for children age 7 and above. TV-PG: Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. TV-14: Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 y of age. TV-MA: Mature audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

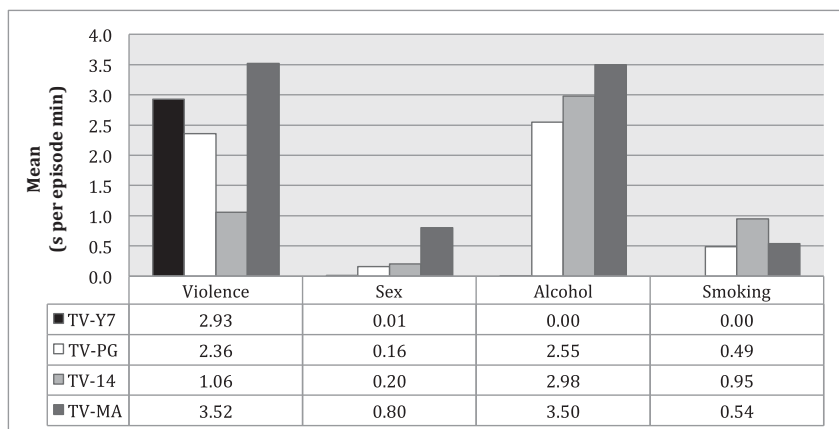


FIGURE 2

Prevalence of risk behavior within TV episodes (in seconds per episode minute) by risk behavior and TV Parental Guidelines rating category. TV-Y7: Directed to older children. These programs are designed for children age 7 and above. TV-PG: Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. TV-14: Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 years of age. TV-MA: mature audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

smoking ($P < .001$). Within sexual behavior models, means for TV-PG and TV-14 shows did not differ from each other but were significantly lower compared with TV-MA shows and significantly higher than TV-Y7 shows. TV-PG, TV-14, and TV-MA

had significantly greater mean levels of alcohol use behavior compared with TV-Y7 shows, but did not differ from each other. TV-MA shows had significantly higher mean levels of smoking behavior than TV-Y7, but no other significant differences across

rating categories were identified for smoking.

Subcategories of Violence by TV Rating

Figure 3 presents mean salience levels of overall, interpersonal, and gory violence by TV rating category. Interpersonal violence occurred more frequently than gory violence, with mean salience scores between 1.23 and 1.91 across rating categories. Analyses revealed significant differences in mean salience of interpersonal violence ($P = .003$), gore ($P < .001$), and overall violence ($P = .003$) across TV show ratings. For total and interpersonal violence, differences were driven by higher mean salience for TV-MA compared with the other categories. Differences among other rating categories were nonsignificant.

DISCUSSION

The TV Parental Guidance system was established over 2 decades ago, yet the level of risk behavior

present across rating categories is largely unknown. The system remains a critical tool for parental media management because TV use accounts for roughly 58% of all youth media exposure, with the typical child aged 8 years and older viewing >4 hours of TV per day.²⁰ It is the only ratings system that can be used by parental blocking devices, and parents are expected to rely on it to screen shows for behaviors like sex and violence. Findings from this sample of TV shows revealed that the TV Parental Guidelines did not significantly differentiate any risk behavior across all 4 rating categories, but functioned best for identification of sexual behavior. For substance use, only restricting at the TV-Y7 level would have allowed parents to limit exposure to drinking and smoking depictions. Finally, the ratings system did not allow parents to limit exposure to depictions of the most common risk behavior -TV violence—in part because violence was pervasive across all shows.

The finding that 70% of shows contain violence is very similar to previously published findings from the National Television Violence Study conducted from 1994 to 1997, which identified violence in ~60% of shows.²¹ Across rating categories, interpersonal violence was depicted the most, with gore depicted less commonly. TV ratings were able to discriminate only gore, a relatively uncommon type of violence depiction. Considering the growing evidence for links between exposure to interpersonal violence and youth aggression, it should be concerning to child health providers as well as parents that interpersonal violence pervades youth-oriented media. The current study raises the question of why shows aimed at even the youngest of children continue to include violence so frequently as part of the script. Indeed, 2 of the TV-Y7 shows, *SpongeBob SquarePants* and *The Fairly OddParents*, contained

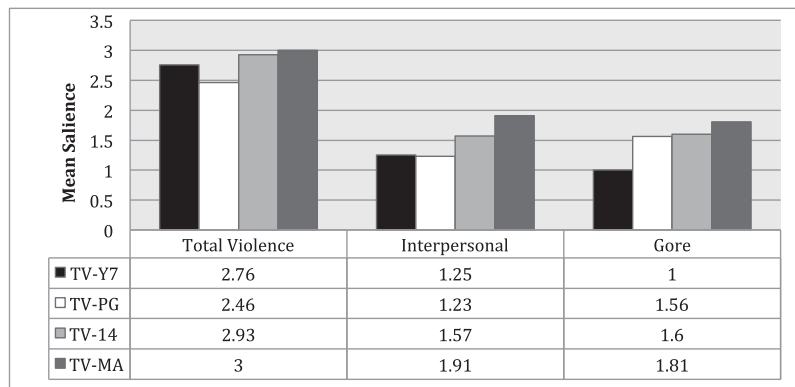


FIGURE 3

Mean saliency ratings of violence for TV episodes that include violence by type of violence and TV Parental Guidelines rating category. Saliency is measured on a 5-point Likert scale from 1 to 5, where 1 = not at all salient and 5 = extremely salient. TV-Y7: Directed to older children. These programs are designed for children age 7 and above. TV-PG: Parental guidance suggested. This program contains material that parents may find unsuitable for younger children. TV-14: Parents strongly cautioned. This program contains some material that many parents would find unsuitable for children under 14 years of age. TV-MA: Mature audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17.

higher violence levels than were present in TV-PG, TV-14, and TV-MA shows. Moreover, research from the National Television Violence Study concluded that much of the violence portrayed in TV was potentially risky for viewers because it was trivialized, glamorized, and sanitized. Additional research across different types of risk behaviors on TV on content, timing, and context of risk behaviors to extend the (somewhat contradictory) work already done^{13,22,23} may elucidate the overarching messages that youth receive when behaviors are paired (or not).

The overall percentage of shows with sexual behavior in our sample aligned with findings in previous research.¹¹ Findings revealed that TV Parental Guidelines ratings are relatively good at identifying sexual behavior, which also had the lowest prevalence among the 4 risk behaviors across shows. Although it remains unclear why sexual behavior and gory violence are more effectively evaluated in TV than other risk behaviors, one explanation may be the more refined definition of these behaviors provided through the Federal Communications Commission compared with other

behaviors (eg, interpersonal violence or substance use). Clearer definitions and guidance on ratings for other risk behaviors in TV may allow for better usefulness for parents around the full range of risky behavior in TV (an upgrade that should include depictions of substance use).

Alcohol use was the second most prevalent risk behavior coded. Although our overall estimate of alcohol appearances across episodes (58%) is lower than previous research (eg, 71% of episodes), excluding TV-Y7 shows from the sample aligns more with previous show sampling methodology and produces an estimate of alcohol use similar to previous research (75% of episodes).²² Indeed, only TV-Y7 consistently differentiated from other rating categories in prevalence within and across episodes for alcohol use and smoking behavior, although smoking depictions were much less prevalent compared with alcohol. Multiple published prospective studies demonstrating an independent dose-response link between exposure to drinking and smoking behavior in movies and subsequent adolescent drinking and smoking behavior emphasize the

need for an update to the ratings to consider substance use,^{8,24,25} because they are currently minimally useful to parents in the identification of substance use in TV, when the evidence strongly suggests they should be.

Conclusions from this study should be considered in light of limitations within the research. The primary limitations of this study were the sample size and sample of shows assessed. Although the number of episodes was substantial for the process of content coding and sampling methodology allowed for greater power to detect effects, a replication of findings within a larger, random sampling of shows across years, target audience, and TV networks would provide additional support for these findings and may identify other factors related to risk behavior depictions. In addition, shows coded did not include TV-Y and TV-G, which limits our ability to generalize our findings across all

rating categories. Additionally, data provided in this article only scratch the surface of media influence on youth as the nuances of context of risk behaviors coded and character analyses were not captured.

Nevertheless, our analysis offers an initial insight into how the rating system functions in identifying levels of risk behavior. Current recommendations from the American Academy of Pediatrics include parental limit-setting of youth media exposure, but the Parental TV Guidelines appear insufficient for differentiation beyond TV-Y7 shows for sexual behavior, smoking, and alcohol use. Moreover, today's youth access TV media through alternative sources, such as YouTube, Hulu, and Amazon, creating additional challenges in regulating the content being consumed. Consequently, recommendations for parental covieing and interventions for parent media literacy posited by the American Academy of Pediatrics²⁶ all

appear warranted given present limitations identified in the TV Parental Guidelines, the only rating system used by current blocking technology. The TV Parental Guidelines indicate that, for ratings of TV-PG and above, content may not be suitable for younger children, which aligns with our findings that TV-Y7 was the only category with minimal to no sex and substance use. Other tools, such as Common Sense Media, Internet Movie Database, covieing, or just more general restriction of media time overall, will be required to effectively monitor and restrict the full range of children's exposure to risk behaviors on TV, especially TV violence. Continued monitoring of the discriminatory ability of the Parental TV Guidelines appears warranted, as well as exploration by alternative media firms like Netflix regarding whether better ratings systems, such as those by Common Sense Media, could be incorporated into the program blocking technology in a meaningful way.

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