

Violent Film Characters' Portrayal of Alcohol, Sex, and Tobacco-Related Behaviors

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KEY WORDS

media, violence, alcohol, tobacco, sex, movies

ABBREVIATIONS

CHAMP—Coding of Health and Media Project

CI—confidence interval

MPAA—Motion Picture Association of America

OR—odds ratio

R—restricted

PG—Parental Guidance Suggested

PG—13 Parents Strongly Cautioned

Dr Bleakley developed the study concept and design, conducted the analyses, and drafted the manuscript; Dr Romer and Dr Jamieson assisted in the development of the study concept and design, consulted on the analyses, and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

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WHAT'S KNOWN ON THIS SUBJECT: Youth are frequent consumers of movies that contain high levels of violence, and violent content in films, especially those rated PG-13, has been increasing over time.



WHAT THIS STUDY ADDS: Content analyses seldom examine how violence is portrayed with other health risk behaviors, such as smoking, drinking, and sex. This study presents an innovative way to characterize on-screen violent content and demonstrates the extent to which risk behaviors co-occur within films.

abstract

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OBJECTIVE: To determine the extent to which movies popular with adolescents feature characters who jointly engage in violence and other risk behaviors. We hypothesized that violent characters engage in other risk behaviors equally often in films rated appropriate for children over 12 (PG-13) and Restricted (R)-rated films.

METHODS: Content analysis of a sample of top-grossing movies from 1985 to 2010 ($n = 390$). We coded movies for the presence of at least 1 main character who was involved in violence and either sex, tobacco, or alcohol use within a 5-minute movie segment and throughout a film.

RESULTS: Approximately 90% of the movies contained a segment with a main character involved in violence, and ~77% of the films had the same character engaging in at least 1 other risk behavior. A violent character was portrayed most often partaking in alcohol-related and sexual behaviors. G and PG movies had less co-occurrence than PG-13 or R-rated movies, but there was no statistical difference between PG-13 and R-rated movies with regards to violence co-occurring with other risk behaviors. These trends did not vary over time.

CONCLUSIONS: Popular films that contain violent characters also show those characters engaging in other risk behaviors. Similar rates of co-occurrence between PG-13 and R-rated films suggest that the Motion Picture Association of America ratings system is not sensitive to the joint portrayal of violence and alcohol, sex, and tobacco-related risk behaviors. The on-screen clustering of violence with other risk behaviors is cause for concern and worthy of additional research. *Pediatrics* 2014;133:1–7

Movies are a popular form of youth entertainment that have the potential to influence beliefs and behaviors as well as broader cultural norms. Numerous studies have linked exposure to media content that features risk behaviors such as smoking,¹ alcohol use,² sex,³⁻⁵ and violence⁶ to adolescents' increased risk for engaging in such behaviors. Violent content in movies and other media is of particular concern because it attracts audiences, particularly male audiences,⁷ and is likely to be a salient feature of top-grossing films.⁸ Furthermore, violent behavior has been increasing over time in top-grossing films^{9,10} with both male and female characters.⁹ Although the Motion Picture Association of America (MPAA) attempts to rate films with potentially harmful content in its Restricted (R) category, its ratings permit as much violent content in films rated appropriate for children over 12 (PG-13) as in R-rated films.^{10,11}

Because children are often exposed to violent media content,^{6,12} it is important to look closely at portrayals of violent characters. PG-13 and other films viewed by youth may feature perpetrators of violence that engage in more common risk behaviors, such as sex and tobacco and alcohol use. Media researchers have noted that when storylines repeat the same types of portrayals, audiences can develop behavioral scripts, which suggest "what events are to happen in the environment, how the person should behave in response to these events, and what the likely outcome of those behaviors would be."¹³ Movies with violent characters may produce behavioral scripts about violence that are characterized by clusters of risk behaviors in which violence becomes associated with engaging in other risk activities, or vice versa. Additionally, social cognitive theory suggests that youth exposed to the modeling of violence and other risk

or risk-glorifying behaviors in media are more likely to elicit risk-taking cognitions, emotions, and behaviors.^{14,15}

Although MPAA ratings for movies were designed to prevent youth from being exposed to developmentally inappropriate content, the utility of the rating system is often debated.¹⁶ Some studies indicate that whereas MPAA ratings are sensitive to sex, they are less effective in identifying the depiction of violence and substance use.^{17,18} Given the pervasiveness of violence in films, we examined the extent to which other risky behaviors (tobacco, alcohol, sex) are modeled by the same violent characters and whether co-occurrence varies by movie rating. To the extent that violence co-occurs with other risk behaviors, we hypothesize that they will appear equally often in PG-13 and R-rated films.

METHOD

Sample

The movie sample for the Coding of Health and Media Project (CHAMP) was chosen from *Variety* magazine's annual top-selling box office list. We examined movies from 1985 to 2010 because 1985 was the first full year in which the PG-13 rating was used. A half sample of the top 30 movies for each year was chosen by selecting every other film, starting with the randomly selected first- or second-ranked movie each year. If a selected movie for the sample was unavailable, the next ranked movie was substituted in its place. The resulting half-sample produced a total of 390 films with an average time length of 1.90 hours.

Coding

The purpose of CHAMP was to code health risk behaviors in popular media to which youth are exposed. The involvement of up to 8 main characters was coded for each behavior. Main characters were defined as those that were most central to the plot and likely

to have the greatest impact on the audience. Characters were identified by using Halliwell's film guide,¹⁹ as well as the movie packaging and the Internet Movie Database. Twenty-four undergraduates were trained as coders using 21 hours of film content not included in the sample. The coders were required to demonstrate reliability of ≥ 0.70 using Krippendorff's α before formal coding began. All reliability statistics presented are Krippendorff's α . Coders viewed the movies in 5-minute segments.

Definitions of Specific Content

Violent Content

Violent content was defined as "intentional acts (e.g., to cause harm, to coerce, or for fun) where the aggressor makes or attempts to make some physical contact that has potential to inflict injury or harm."²⁰ The definition excludes natural disasters, accidents, objects not attributed to a character, and expected physical acts in sport games that are not intended to seriously injure. Coders evaluated whether characters committed a violent act or exchange. They also evaluated violent content on a 5-point scale for explicitness and the extent to which the violent act was modeled. The explicitness levels were "consequences/aftermath sequences," in which representations of violence (eg, injuries; maimed, disfigured, or dead bodies; characters bleeding) were shown but not violence itself; instances where violence was portrayed, but there was no bloodshed, such as a character striking another, "somewhat modeled"; violence and the use of weapons, or "modeled"; the presence of blood or penetration by a bullet, shotgun shell, knife, poison, or other object, "very modeled"; and a combination of penetration and bloodshed (eg, severing of a body part), or "most modeled." The reliability for the presence of violence initiated by a character

in a segment was 0.73; reliability for the explicitness scale was 0.78.

Sexual Content

Sexual content included kissing (on lips), nudity, sexual behavior, or sexual intercourse, implicitly or explicitly shown. The explicitness of sexual content per segment was coded on a 5-point scale from “no sexual content,” “somewhat modeled” to “modeled,” “very modeled,” and “most modeled.” Sexual content in the “somewhat modeled” category included kissing on the lips (but no other sexual contact), seductive dancing with clothing, and the removal of clothing without visible nudity; a female character’s exposed breasts without other sexual activity; or where there was an indication through visual cues that intercourse occurred but not shown. Content in the more explicit categories ranged from “modeled,” which included foreplay behaviors (eg, fondling) while clothed or partially clothed but no penetration; to “very modeled,” including foreplay behaviors while naked, intercourse while not completely naked, or visible genital areas; and “most modeled,” or intercourse or other sexual penetration or masturbation while completely naked. In cases where multiple sexual episodes occurred in 1 segment, the most explicit score was used. Reliability for the presence of sexual content was 0.83; reliability for the scale of modeled sexual content was 0.76.

Tobacco Content

Character involvement with tobacco was defined as direct (actual inhaling of smoke) or implied tobacco consumption, which entailed handling of lit tobacco products or appearing in situations where they are being consumed but the actual act of “smoking” is not directly shown on screen. Implied use also applied to smokeless tobacco, such as the portrayal of dip cans, snuff bags, or

spit cups. Reliability for the presence of tobacco was 0.73.

Alcohol Content

Similarly, character involvement with alcohol was defined as direct or implied depiction of a character consuming alcohol. Implied alcohol consumption occurred when characters were not directly shown drinking but drinking can be easily and directly inferred by the context (ie, a character sitting in front of an open beer bottle or holding a glass of wine; coming home from a party or club obviously drunk or hung over). Reliability for the presence of alcohol was 0.81.

Measures

Main Character Involvement for Each Risk Behavior

Up to 8 main characters were identified for each movie. When any of the risk behaviors was coded as present in a particular segment, the particular character who was implicitly or directly engaged in the behavior was recorded.

Co-occurrence of Behaviors

Variables were created to represent a character’s involvement with any violence and each of the following behaviors: sex, explicit sex (defined as sex that was at least “modeled” on the explicitness scale), tobacco, or alcohol in a particular 5-minute segment (segment co-occurrence) and in the course of each film (film co-occurrence). For example, if the same main character (at least 1) was involved in the depiction of violence and sex in the same segment or in the film, co-occurrence was considered present. For all behaviors, segments with co-occurrence were summed for each movie.

Movie Ratings

The rating categories²¹ were G, PG, PG-13, and R. For the purposes of analysis, G and PG movies were combined because

there were few G movies. The final rating variable had 3 categories: G and PG, PG-13, and R.

Analysis

We plotted trends over time for the content areas: violence, tobacco, alcohol, sex, and explicit sex. Explicit violence trends were also examined because in later analyses we examine whether the type of violence varies by rating. Lowess curve fitting procedures were used to smooth the data²² for descriptive purposes. By using logistic regression, the presence of each type of risk content was regressed by film year to determine whether the trends were significantly different over time. We then examined the 2 types of behavior co-occurrence for any main character (throughout a film and within a 5-minute segment) by movie rating. All descriptive analyses were conducted by movie rating. For each category of co-occurrence, we present the mean number of segments by movie rating. Regression analyses (logistic for dichotomous outcomes and ordinary least squares for continuous ones) were used to test differences in the outcomes by rating categories. The referent group for all analyses was PG-13, and postestimation tests were conducted to compare the regression coefficients of G and PG movies to R-rated movies.

RESULTS

Trends of Risk Content Over Time

Figure 1 shows the trend over time from 1985 through 2010 for the presence of character involvement in the singular content areas of interest: violence, explicit violence, tobacco, alcohol, sex, and explicit sex. The most dramatic change was a decline in the amount of tobacco content in movies (odds ratio [OR] = 0.92; confidence interval (CI), 0.89–0.94; $P < .01$). There was also a slight, statistically significant

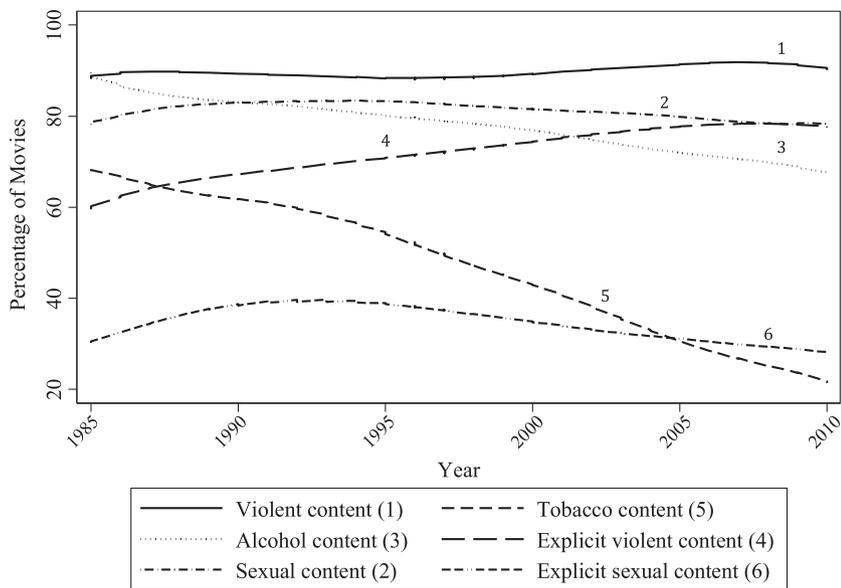


FIGURE 1 Percentage of movies with main characters involved in violent, tobacco, alcohol, or sex behaviors, 1985–2010.

decline in alcohol portrayals (OR = 0.96; CI, 0.93–0.99; $P < .01$), whereas violent and sexual content have remained stable over this 25-year period. Explicit violent content increased over time (OR = 1.04; CI, 1.01–1.08; $P < .05$).

Risk Behaviors in Movies and Segments

Table 1 presents the percentages for movies with character involvement in any of the risk behaviors and the mean number of segments per movie that feature each risk behavior. Approximately

90% of the movies in our sample ($n = 390$) contained a segment with a main character involved in violence, with no difference by movie rating, and 72.3% contained explicit violence, with less in G and PG movies (65%) than PG-13 (73.9%) or R-rated (78.1%) films. There was no statistical difference in either any violence or explicit violence between PG-13 and R-rated movies. The other risk behaviors occurred less often in G and PG than in PG-13 and R-rated movies, with the exception of sex. R-rated movies were more likely than

PG-13 movies to have character involvement with tobacco (71.9% vs. 46.4%) and explicit sex (54.4% vs 36.6%), respectively.

Violence and explicit violence appeared in more segments than either tobacco, alcohol, sex, or explicit sex. Overall, the sampled movies had 23.1 (SD 4.43) 5-minute segments. Of the movies with violent content ($n = 350$), violence appeared in almost 7 segments (about 30%), with no difference in the number of violent segments between PG-13 and R movies. However, this percentage was lower in G and PG (23.5%) than in PG-13 (31.0%) and R (33.8%) movies.

Co-occurrence of Risk Behaviors in Movies and Segments

Table 2 presents the percentage of movies with film and segment level co-occurring risk behaviors. Over three-quarters of the films (77.4%) involved a violent character engaging in at least 1 other risk behavior. However, violence co-occurred most often with alcohol and sex. Preliminary analyses indicated that the presence of violent characters engaging in another risk behavior throughout the film or within a segment did not vary by time, and there was no interaction by time and rating. Therefore, all subsequent analyses examined differences only by rating.

TABLE 1 Percentage of Movies and Mean Number of 5-Min Movie Segments With Main Character Involvement in Risk Behaviors by Rating

	Overall, $n = 390$	G and PG, $n = 123$	PG-13, $n = 153$	R, $n = 114$
Percentage of movies with involvement of any character in:				
Any violence	89.7	88.6 ^a	89.5 ^a	91.2 ^a
Any explicit violence	72.3	65.0 ^a	73.9 ^b	78.1 ^b
Any tobacco	46.9	24.4 ^a	46.4 ^b	71.9 ^c
Any alcohol	77.9	64.2 ^a	83.0 ^b	86.0 ^b
Any sex	81.5	78.0 ^a	85.0 ^a	80.7 ^a
Any explicit sex	35.1	15.4 ^a	36.6 ^b	54.4 ^c
Mean (SD) number of overall segments per movie with:				
Any violence	6.80 (4.85) ($n = 350$)	4.86 (3.78) ^a ($n = 109$)	7.27 (4.98) ^b ($n = 137$)	8.19 (5.08) ^b ($n = 104$)
Any explicit violence	5.22 (4.11) ($n = 282$)	3.54 (3.30) ^a ($n = 80$)	5.59 (4.31) ^b ($n = 113$)	6.25 (4.09) ^b ($n = 89$)
Any tobacco	4.84 (3.88) ($n = 183$)	4.50 (3.51) ^{a,b} ($n = 30$)	3.75 (3.34) ^a ($n = 71$)	5.91 (4.18) ^b ($n = 82$)
Any alcohol	4.23 (3.23) ($n = 304$)	3.25 (3.35) ^a ($n = 79$)	4.03 (2.57) ^a ($n = 127$)	5.27 (3.62) ^b ($n = 98$)
Any sex	3.81 (2.62) ($n = 318$)	2.76 (1.85) ^a ($n = 96$)	3.83 (2.23) ^b ($n = 130$)	4.86 (3.32) ^c ($n = 92$)
Any explicit sex	2.28 (1.87) ($n = 137$)	1.63 (0.76) ^a ($n = 19$)	1.89 (1.23) ^a ($n = 56$)	2.82 (2.39) ^b ($n = 62$)
Number of segments per movie	23.06 (4.43) ($n = 390$)	21.07 (3.52)	23.6 (4.54)	24.5 (4.44)

Percentages with different letters are statistically different from one another at the $P < .05$ level or less.

TABLE 2 Percentage of Movies and Mean Number of 5-Min Movie Segments With Violent Character Involvement in Other Risk Behaviors (Co-occurrence) by Rating

	Overall, <i>n</i> = 390	G and PG, <i>n</i> = 123	PG-13, <i>n</i> = 153	R, <i>n</i> = 114
Percentage of movies with involvement of violent character in other risk behaviors throughout movie (co-occurrence within film)				
Any co-occurrence within film	77.4	62.6 ^a	81.7 ^b	87.7 ^b
Tobacco and violence	34.1	17.9 ^a	30.1 ^b	57.0 ^c
Alcohol and violence	62.1	47.2 ^a	66.6 ^b	71.9 ^b
Sex and violence	62.8	53.7 ^a	67.3 ^b	66.6 ^b
Explicit sex and violence	27.2	10.6 ^a	30.1 ^b	41.2 ^b
Percentage of movies with involvement of violent character in other risk behaviors in 5-min segment (co-occurrence within segments)				
Any co-occurrence in a segment	47.2	26.8 ^a	54.2 ^b	59.6 ^b
Tobacco and violence	15.9	7.3 ^a	12.4 ^a	29.8 ^b
Alcohol and violence	29.0	13.0 ^a	35.3 ^b	37.7 ^b
Sex and violence	29.0	17.9 ^a	35.3 ^b	32.5 ^b
Explicit sex and violence	9.2	4.1 ^a	7.8 ^a	16.6 ^b
Mean (SD) number of overall segments per movie with:				
Any co-occurrence within a segment	2.69 (2.43) (<i>n</i> = 184)	2.21 (2.10) ^a (<i>n</i> = 35)	2.32 (2.10) ^a (<i>n</i> = 83)	3.38 (3.26) ^b (<i>n</i> = 68)
Tobacco and violence within a segment	1.66 (1.17) (<i>n</i> = 62)	1.44 (0.73) ^a (<i>n</i> = 9)	1.32 (0.67) ^a (<i>n</i> = 19)	1.91 (1.42) ^a (<i>n</i> = 34)
Alcohol and violence within a segment	1.42 (0.84) (<i>n</i> = 113)	1.50 (1.32) ^a (<i>n</i> = 16)	1.30 (0.54) ^a (<i>n</i> = 54)	1.56 (0.43) ^a (<i>n</i> = 43)
Sex and violence within a segment	1.61 (1.14) (<i>n</i> = 113)	1.36 (1.00) ^a (<i>n</i> = 22)	1.54 (0.84) ^a (<i>n</i> = 54)	1.86 (1.51) ^a (<i>n</i> = 37)
Explicit sex and violence within a segment	1.39 (0.60) (<i>n</i> = 36)	1.20 (0.45) ^a (<i>n</i> = 5)	1.25 (0.45) ^a (<i>n</i> = 12)	1.52 (0.69) ^b (<i>n</i> = 19)

Percentages with different letters are statistically different from one another at the $P < .05$ level. Percentages of co-occurrence within segments are based on the number of movies with co-occurrence within a segment.

Logistic regression analyses indicated that within films, a character's involvement with violence and another risk behavior was not statistically different between PG-13 and R-rated movies, with the exception of violence and tobacco. This was probably a result of the high percentages of tobacco content in R-rated movies compared with others. Compared with PG-13 and R-rated movies, G and PG movies had significantly less co-occurrence across all content.

The same pattern held true for co-occurrence in segments, with 2 exceptions. The difference between G or PG and PG-13 movies with regard to the co-occurrence of violence with explicit sex and violence with tobacco was not statistically significant; the only significant difference between violence with explicit sex and violence with tobacco was between G or PG and R-rated movies. Therefore, the percentage of movies that portrayed the same character engaging in violence and alcohol or violence and sex either within a 5-minute segment or throughout an

entire film was statistically equivalent for PG-13 and R-rated movies.

Regression analyses showed no differences across rating groups in number of segments containing violence with tobacco, alcohol, or sex. Violence with any other risk behavior in general and violence with explicit sex were significantly higher in R-rated movies compared with G or PG and PG-13 films.

DISCUSSION

Our analyses of top-grossing films from 1985 to 2010 indicate that the on-screen character involvement with violence and other risk behaviors has been remarkably stable over time and across MPAA ratings. Seventy-seven percent of films featured violent characters also engaging in another risk behavior within a film, and 47% of films with violent characters were also shown engaging in 1 of 3 other risk behaviors within a 5-minute segment. This was particularly true in films rated as PG-13 and R, where film co-occurrence was

81.7% and 87.7%, respectively, and segment co-occurrence was 54.2% and 59.6%, respectively. With very few exceptions, PG-13 and R-rated movies had the same levels of risk behaviors co-occurring with violent content both throughout films and within segments. On average, violent content accounted for almost 30% of films' segments. Of the segments with violence, 40% featured violence co-occurring with another risk behavior. The mean number of segments containing violence with tobacco, alcohol, or sex did not vary by movie rating (G and PG, PG-13, or R).

The similarity in levels of co-occurrence between PG-13 and R-rated movies is troubling, and yet it is consistent with research on the questionable effectiveness of the ratings system as a tool to shield youth from inappropriate content. The reliability and validity of the movie ratings system are problematic, and its usefulness for parents limited.^{16,23,24} Furthermore, "ratings creep," the phenomenon of finding more explicit content in movies with lower ratings (ie, PG-13) over time,^{10,25} has been

noted for sexual^{18,25} and violent content.^{10,18,25} Given that an R rating for movies is associated with less revenue^{26,27} and that violent content is related to movie sales,⁸ “it is not surprising that today many motion picture companies push the envelope at the PG-13 rating but edit content as needed to avoid the restricted rating.”²⁷

Through observational learning²⁸ and the acquisition of scripts that inform adolescents’ thoughts and associations,²⁹ the behavioral context in which violence is presented in films may change the nature of adolescents’ perceptions about violence, potentially teaching youth that violence is as acceptable as these behaviors. In some cases, violent characters who engage in sex and alcohol use may be seen as glamorous. Because violence is prevalent in most top-grossing films, this conceptualization of potentially harmful content is critical in understanding the effects of violent media exposure and the portrayal of risk behaviors in general.

Media effects research on violence would benefit from future studies that explore the normative and behavioral implications of exposure to the co-occurrence of violence and other risk behaviors such as risky sex, alcohol use, and tobacco. Conceptualizing exposure to violence and other risk behaviors in this way is a novel approach to understanding whether the effects of violent content extend beyond aggressive and violent behaviors into other risky

activities and whether other risk behaviors become cognitively and behaviorally related to violence. Evidence shows that adolescents do engage in clusters of risks behaviors, with their participation increasing with age.^{30–32} The role media play in the clustering of risk behaviors, including violence, is unknown. And the engagement of the viewer with the particular medium should also be taken in account; active participation in video game violence may have different effects, in both the short and long term, compared with more passive movie watching.

Not all adolescents are equally likely to be influenced by the simultaneous portrayal of violence and other risk behaviors. Sensation-seeking youth may be particularly vulnerable to co-occurrence in films. Sensation seeking is a personality trait with a biological basis that is characterized by attraction to novel and intense experiences, including a willingness to engage in various types of risk^{33,34} such as the use of drugs and tobacco.³⁵ It is also correlated with forms of impulsivity that underlie a range of antisocial behavior.³⁶ High sensation seekers have shown a preference for “high-arousal” movies, which can include uses of features such as sound effects, faster and more frequent movement, and more suspense and drama,³⁷ and sensation seeking has been shown to predict the use of violent media content.³⁸

Our study used main character involvement in one or more behaviors

throughout a film and within a 5-minute segment to define co-occurring risk behaviors. It is possible that viewers are less aware of co-occurrence within a film than within a 5-minute segment. However, our findings tend to be consistent for both types of co-occurrence across all rating categories. And although our sample included top-selling movies, less mainstream movies that are popular among youth were not represented. Finally, we are unable to draw any causal conclusions about the effects of violent and other types of movie content on adolescents, although previous research suggests that such content can be influential for some.

CONCLUSIONS

These findings represent an innovative way to characterize violent content in films. Youth, particularly those with impulsive sensation-seeking tendencies, may be at elevated risk for unhealthy behaviors as a result of their media exposure to problematic content. Our findings also raise serious concerns about the effectiveness of the MPA rating system for allowing potentially harmful co-occurring content in youth-accessible films.

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