Injury Prevention Practices as Depicted in G-Rated and PG-Rated Movies

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Background: Previous studies on alcohol, tobacco, and violence suggest that children's behavior can be influenced by mass media; however, little is known about the effect of media on unintentional injuries, the leading cause of death among young persons in the United States.

Objective: To determine how injury prevention practices are depicted in G-rated (general audience) and PG-rated (parental guidance recommended) movies.

Design: Observational study.

Setting: The 25 movies with the highest domestic box-office grosses and a rating of G or PG for each year from 1995 through 1997. Movies that were predominantly animated or not set in the present day were excluded from analysis.

Subjects: Movie characters with speaking roles.

Main Outcome Measures: Safety belt use by motor vehicle occupants, use of a crosswalk and looking both ways by pedestrians crossing a street, helmet use by bicyclists, personal flotation device use by boaters, and selected other injury prevention practices.

Results: Fifty nonanimated movies set in the present day were included in the study. A total of 753 person-scenes involving riding in a motor vehicle, crossing the street, bicycling, and boating were shown (median, 13.5 person-scenes per movie). Forty-two person-scenes (6%) involved falls or crashes, which resulted in 4 injuries and 2 deaths. Overall, 119 (27%) of 447 motor vehicle occupants wore safety belts, 20 (18%) of 109 pedestrians looked both ways before crossing the street and 25 (16%) of 160 used a crosswalk, 4 (6%) of 64 bicyclists wore helmets, and 14 (17%) of 82 boaters wore personal flotation devices.

Conclusions: In scenes depicting everyday life in popular movies likely to be seen by children, characters were infrequently portrayed practicing recommended safe behaviors. The consequences of unsafe behaviors were rarely shown. The entertainment industry should improve its depiction of injury prevention practices in G-rated and PG-rated movies.


Editor's Note: It's pretty sad when you can't act appropriately even when you're acting.

Catherine D. DeAngelis, MD

Unintentional injuries are the leading cause of death in the United States for persons aged 1 to 34 years.1 Efforts to prevent injuries often require behavior changes (eg, wearing a helmet while bicycling and using a safety belt when in a motor vehicle); however, changing behavior patterns is not easy. Many factors influence a person’s behavior, one of which is the media.7 The typical child in the United States is exposed to an average of more than 3 hours of mass media per day (ie, a combination of television, movies, radio, and other sources).7 Previous studies of tobacco use, alcohol consumption, and violence in movies and television strongly suggest that children’s behavior can be influenced by media images.3-8

To examine the role movies might play in influencing children’s injury prevention practices, we studied how often certain activities (eg, riding in a motor vehicle, crossing a street as a pedestrian, bicycling, and boating) were shown in movies likely to be seen by children and determined how injury prevention practices for these activities were depicted.

RESULTS

Of the 75 movies in the initial sample, 25 (33%) were excluded; 9 (12%) were animated, and 16 (21%) were not set in the present day. The final sample consisted of 50 films (14 movies from 1995, 17 from 1996, and 19 from 1997). Four (8%) of the movies were rated G and 46 (92%) were
Fifteen (30%) of the 50 movies showed bicycling, with a median of 4 person-scenes per movie with this activity (range, 1-14). Six percent of bicyclists wore helmets, including 1 (6%) of 16 adults and 3 (6%) of 48 children. None of 14 females wore helmets, compared with 4 (8%) of 50 males. Ten (20%) of the 50 movies showed boating, with a median of 6.5 person-scenes per movie with this activity (range, 1-31). Seventeen percent of characters wore PFDs, including 10 (18%) of 57 adults and 4 (16%) of
25 children. Nine (33%) of 27 females wore PFDs, compared with 5 (9%) of 55 males (RR, 3.7; 95% CI, 1.9-7.0).

There were 64 additional person-scenes involving other recreational activities of interest. No other activity occurred in more than 8 movies (16%) in the study sample. Helmets were used in 28 (67%) of 42 person-scenes involving in-line skating, 3 (60%) of 5 person-scenes involving riding a motorcycle, 2 (29%) of 7 person-scenes involving horseback riding, 1 (14%) of 7 person-scenes involving snowmobiling, and none of 3 person-scenes involving skateboarding. Thirty-one (74%) of 42 in-line skaters wore wrist guards, 30 (71%) wore elbow pads, and 30 (71%) wore knee pads. None of the 3 skateboarders wore any protective equipment. The results for in-line skating were affected by good compliance with safety recommendations in 3 films that had a substantial number of person-scenes of this activity. For example, helmets were used in 26 (96%) of 27 person-scenes in these 3 movies, but in just 2 (13%) of 15 person-scenes in the other 5 movies with scenes of in-line skating.

Our results indicate that in scenes depicting everyday life in popular movies likely to be seen by children, characters are infrequently portrayed practicing recommended safe behaviors. There were no significant differences in injury prevention practices between adults and children. Females tended to use appropriate injury prevention practices more often than males. Use of safety belts and bicycle helmets in movies was lower than both current practice in this country (recent surveys indicate that 68% of motor vehicle occupants are properly restrained29 and 18% of adult bicyclists and 25% of child bicyclists wear helmets30,31) and year 2000 objectives (≥85% use of occupant protection systems and ≥50% use of bicycle helmets32). Movies also rarely depicted the consequences of behaviors. Characters were infrequently injured even when engaging in high-risk activities, and those who were injured often made instant recoveries. Most images that a child sees in G- and PG-rated movies do not promote appropriate injury prevention practices.

Although multiple factors influence a child’s behavior, both the amount33 and type34 of exposure to mass media can affect risk taking. For example, in the 1970s, young bicyclists were injured attempting to imitate stunts performed on television by Evel Knievel.35 Although the exact role of media images on injury prevention practices by children can be debated, changing behaviors by characters in movies could be an inexpensive, minimally intrusive method of modeling appropriate behaviors to a large audience.36 Attempts to influence media portrayals of injury prevention practices have met with some success. After a letter advocating safety belt use was sent to 8 cartoonists who used vehicle occupants in their comic strips, safety belt use increased from 15% to 41% in these comic strips.36 Safety belt use by at least 1 star of a television action show increased after a letter-writing campaign by students.37 However, the overall improvement in safety belt use by television characters in the past 2 decades has been disappointing.38,39

This study has at least 3 limitations. First, the study period was too short to assess trends in injury prevention practices in the movies over time. Second, although we did not collect data for nonspeaking characters, it appeared that their injury prevention practices were usually the same or worse than those of characters with speaking roles. Because many person-scenes included nonspeaking characters, our results likely underestimate the number of person-scenes that a viewer is actually exposed to and overestimate the percentage of scenes that depict appropriate behavior. Finally, whether we can generalize our results from movies to television is unknown, which is important because television is the dominant medium to which children are exposed. Two previous studies suggest, however, that injury prevention practices may be similar in movies and television. Greenberg and Thanki40 found that 19% of characters wore

<table>
<thead>
<tr>
<th>Activity</th>
<th>No. (%) of Movies With Activity</th>
<th>Safe Practices</th>
<th>No. of Person-Scenes With Safe Practices/Person-Scenes With Activity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riding in motor vehicle</td>
<td>45 (90)</td>
<td>Safety belts or child safety seat</td>
<td>119/447 (27)</td>
</tr>
<tr>
<td>Crossing street as a pedestrian</td>
<td>32 (64)</td>
<td>Using a crosswalk</td>
<td>25/160 (16)</td>
</tr>
<tr>
<td>Bicycling</td>
<td>15 (30)</td>
<td>Helmet</td>
<td>4/64 (6)</td>
</tr>
<tr>
<td>Boating</td>
<td>10 (20)</td>
<td>Personal floatation device</td>
<td>14/82 (17)</td>
</tr>
<tr>
<td>In-line skating</td>
<td>8 (16)</td>
<td>Helmet</td>
<td>28/42 (67)</td>
</tr>
<tr>
<td>Horseback riding</td>
<td>3 (6)</td>
<td>Helmet</td>
<td>2/7 (29)</td>
</tr>
<tr>
<td>Motorcycle riding</td>
<td>3 (6)</td>
<td>Helmet</td>
<td>3/5 (60)</td>
</tr>
<tr>
<td>Skateboarding</td>
<td>3 (6)</td>
<td>Helmet</td>
<td>0/3 (0)</td>
</tr>
<tr>
<td>Snowmobiling</td>
<td>1 (2)</td>
<td>Helmet</td>
<td>1/7 (14)</td>
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</tbody>
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safety belts in a study of 1996 movies from all rating categories. In a similar study of broadcast and cable television that Greenberg and Gregg conducted in 1997, safety belts were found to be used by 21% of the characters.

Based on our findings, we make 3 recommendations. First, we encourage the entertainment industry to depict appropriate injury prevention behaviors in children’s movies. The Entertainment Industries Council (Burbank, Calif) had a safety belt initiative in the 1980s; this program should be revived and expanded to include other areas of injury prevention (eg, pedestrian behavior, bicycling, and boating). Second, parents should be educated about injury prevention so that they can help their children recognize inappropriate behaviors that are depicted in movies or other mass media. Parents also need to be aware of the importance of being good role models for their children with regard to injury prevention practices. Although media images are powerful, they are probably less important than the behavior patterns set by a child’s parents. Finally, surveillance of injury prevention practices in children’s movies should be maintained to assess trends over time.

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