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CONFERENCE PROCEEDINGS

Media Violence

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Research on the effects of media violence is not well understood by the general public. Despite this fact, there is an overwhelming consensus in the scientific literature about the unhealthy effects of media violence. Meta-analyses show that media-violence viewing consistently is associated with higher levels of antisocial behavior, ranging from the trivial (imitative violence directed against toys) to the serious (criminal violence), with many consequential outcomes in between (acceptance of violence as a solution to problems, increased feelings of hostility, and the apparent delivery of painful stimulation to another person). Desensitization is another well-documented effect of viewing violence, which is observable in reduced arousal and emotional disturbance while witnessing violence, the reduced tendency to intervene in a fight, and less sympathy for the victims of violence. Although there is evidence that youth who are already violent are more likely to seek out violent entertainment, there is strong evidence that the relationship between violence viewing and antisocial behavior is bidirectional. There is growing evidence that media violence also engenders intense fear in children which often lasts days, months, and even years. The media's potential role in solutions to these problems is only beginning to be explored, in investigations examining the uses and effects of movie ratings, television ratings, and the V-chip, and the effects of media literacy programs and public education efforts. Future research should explore important individual differences in responses to media violence and effective ways to intervene in the negative effects. © *Society for Adolescent Medicine, 2000*

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Is heavy exposure to media violence unhealthy for children and youth? Although this question has been debated for decades (for centuries, in fact, if we include literature and drama), there is still a good deal of public confusion over the research findings and how they should be interpreted.

Unhealthy Effects of Media Violence

Aggressive Behavior and Hostility

The most pressing public concern seems to be about the contribution of television, movie, and video game violence to the perpetration of actual violence in society. The intensity of opinion peaked in the wake of the school shootings in Littleton, Colorado. Despite concurrence by almost all academic researchers and child advocacy groups that media violence contributes to youth violence (1), discussions in the media often conclude that the research findings are equivocal.

Part of the problem undoubtedly stems from the media's reluctance to promote information that runs contrary to their economic self-interest. Another major problem derives from the difficulty in communicating the results of research in an area in which the ultimate experiment is not possible: We cannot randomly assign children to watch heavy doses of media violence during their formative years and

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compare their later violent criminal acts with those of children in an unexposed control group. Nor can we purposely expose children to hours of violent video games to determine how many of them impose similar aggression on their younger siblings.

Another communication problem occurs because many well-known studies in the literature deal with dependent measures of aggression that do not make a compelling case to the general public. The classic bobo-doll research by Bandura et al., in which imitative violence was committed against toys, is one such example (2). Other examples include experiments involving the so-called aggression machine, in which students believe they are delivering shocks to an unseen victim (3).

The problem of providing convincing evidence is not that much different, however, from the problem of studying the effect of medical risks. Tobacco researchers, for example, cannot randomly assign people to smoke or not while keeping everything else constant. Some of the studies are correlational, looking at how habitual smoking relates to the diseases people contract over the course of a lifetime. Because people who smoke often make other unhealthy lifestyle choices, this research takes other behaviors into account and looks at the contribution of smoking to ill health after the impact of other behaviors is statistically controlled. When looking for causal conclusions, tobacco researchers do experiments on animals. Experimenters can look at what happens to the lungs of dogs which are made to smoke and compare them to the lungs of dogs in a control condition. These effects are then generalized, to the extent appropriate, to the lungs of humans.

In a similar fashion, social science researchers can follow the media habits of children over the course of many years and then explore the degree to which exposure to media violence is associated with antisocial behavior such as violent activities or hostile attitudes. These researchers also control, to the extent possible, for other influences that might account for the development of antisocial outcomes. Researchers also conduct experiments in which the short- term effects of viewing violence or not (or different types of violence) are compared. The outcomes measured in these experiments rarely are actual physical violence as it occurs naturally, but rather other related outcomes such as attitudes accepting of violence, feelings of hostility, or the willingness to inflict pain or to impose nonphysical negative consequences on someone else. Together, these two types of investigations, correlational and experimental, give a compelling picture of the effect of media violence.

Perhaps the most powerful support for the conclusion that media violence is a significant contributor to violent and hostile behavior is provided by the meta-analysis by Paik and Comstock in 1994 (4). This report statistically combined more than 200 correlational and experimental studies and involved more than 1000 comparisons between violent media and control groups. The analysis revealed that media violence viewing consistently is associated with higher levels of antisocial behavior ranging from the trivial (imitative violence directed against toys) to the serious (criminal violence), with many consequential outcomes in between (acceptance of violence as a solution to problems, increased feelings of hostility, and the apparent delivery of painful stimulation to another person).

It is important to understand the psychological mechanisms that underlie these effects. Social cognitive theory (5), which posits that children often imitate new behaviors they see both in their real environment and in the media, has been shown to account for a wide variety of effects. Recent evidence from a survey of elementary school principals conducted in Israel shortly after television's World Wrestling Federation became available there in 1994 (6) showed that children's widespread copying of the wrestlers' behaviors led to a large increase in injuries on school playgrounds, often requiring medical attention. Moreover, there is a good deal of research evidence that in general, violence that is shown to be justified and that is committed by attractive protagonists is more likely to be imitated than violence shown with other contextual features. Recent content analyses confirm that a high proportion of violence on television exhibits these features (7).

Excitation transfer theory (8) proposes that some of the effects of media violence on subsequent aggressive behavior occur because media violence increases physiological arousal and thereby intensifies subsequent emotional responses. This theory accounts for some of the short-term effects of media violence on individuals who are provoked to anger. However, recent research reveals that short-term increases in arousal can account for only a portion of media violence findings. In a study by Zillmann and Weaver (9), college students were randomly assigned to view either gratuitously violent or nonviolent movies for four consecutive days. On the fifth day, in a purportedly unrelated study, they were put in a position to help or hinder a woman's chances of future employment. Both men and women who had been exposed to the violence were more harmful to that person's prospects, independent of whether she

had treated them well or had behaved in an insulting fashion. This effect was explained as a function of the movies' repeated instigation of violent and hostile cognitions, which over time become chronically accessible and which then fuel hostile behavior even in nonprovoking situations.

Members of the entertainment community often argue that the media violence–aggressive behavior connection may be entirely explained by the fact that people who already are violent prefer to watch violence. Although research does suggest that media violence is more popular among violent than nonviolent viewers (10), the many experiments that have randomly assigned subjects to view or not view violence show that the findings cannot be explained by selective exposure alone. A field investigation by Black and Bevan demonstrated clearly that the relationship between viewing violence and viewers' hostility is bidirectional (11). By going to a theater and asking moviegoers to fill out a hostility inventory before or after they viewed a movie that they themselves had selected, the researchers determined that both male and female viewers who had chosen a violent movie were indeed initially more hostile than viewers who had selected a nonviolent movie. Moreover, levels of hostility became even higher after the subjects viewed the violent movie but remained at the same low level after subjects viewed the nonviolent movie.

Desensitization is another well-documented effect of viewing violence. Desensitization is observable in reduced arousal and emotional disturbance while witnessing violence (12), the reduced tendency to intervene in a fight (13), and less sympathy for the victims of violence (14,15). Concern recently has been raised about the desensitizing effect of violent video games. Some observers speculate that shooter games may have contributed to past school shootings, because the games provide both training in gun-wielding techniques and strong desensitization experiences (16).

Fear and Nightmares

There is growing evidence that media violence also engenders intense fear in children which often lasts days, weeks, months, and even years (17–20). The effects include obsessive thoughts, repetitive nightmares, and sleep disturbances. In addition, children often become hesitant to engage in routine activities that are related to frightening movie scenes. Young children may experience enduring fright effects from brief, visually disturbing excerpts of a program or movie, sometimes even from a few seconds of a movie promotion or a teaser for an upcoming newscast (21).

Developmental differences have been observed in the types of media stimuli that frighten children and the coping strategies that are effective. For example, children between the ages of 2 and 6 years are most likely to be frightened by grotesque visual images of animals, natural disasters, and monsters, whereas older children are more likely to be frightened by realistic threats to their personal well-being. Long-term media-induced fears are not limited to young children, however; often teenagers experience lingering distress from programs and movies, especially those with themes involving sexual assault or supernatural forces (22,23). Younger children's fears are more likely to be calmed by nonverbal or physical strategies such as distraction or affection, whereas older children's fears are more responsive to information about why the upsetting outcome cannot happen to them or how they can prevent it (24).

Media's Potential Role in Solutions

Although much research energy has been devoted to chronicling the problems that media violence engenders or promotes, research on possible solutions is relatively scarce.

Movie and Television Ratings and the V-Chip

There is growing interest in the use of ratings and labels to inform parents about the media content to which their children might be exposed. The Motion Picture Association of America ratings, which now include the age-based movie ratings of G, PG, PG-13, R, and NC-17, have been criticized for being vague and uninformative. Research has confirmed that movie ratings do not differentiate well among different types of content and that parents prefer ratings that give information about content over those that provide age recommendations (25,26). Research has also shown that more restrictive movie ratings actually entice many children to media fare that is designated as inappropriate for their age group (27). However, content labels are less likely to make programming more attractive (28).

In 1997, in conjunction with the federally mandated V-chip, the television industry implemented the TV Parental Guidelines rating system for television programs. Originally, this system included six age-based ratings, two for children's programs, TV-Y and TV-Y7, and four for general audience programs,

TV-G, TV-PG, TV-14, and TV-MA. However, the system was sharply criticized for reasons similar to those levied against movie ratings (29). Six months after the system's first launch, in a compromise with critics, the industry group amended the rating system to add information on content. The revision added the letters FV for intense "fantasy violence" in children's programs and V, S, L, and D, for violence, sex, coarse language, and sexual dialogue and innuendo, respectively, in general audience programs. There has been little research on the effects of the new guidelines, except studies showing that few parents know how to interpret the ratings (30) and that there is little congruence between the content letters assigned to a program and the actual content of the program (31).

As of January 1, 2000, all new televisions sold in the United States with a screen size of 13 inches or larger are required to include the V-chip as standard equipment. This represents 90% of televisions sold in the United States. Unfortunately, the V-chip and television ratings have not had much publicity and their complexity makes it unlikely that they will be widely used unless a way is found to inform and educate parents about how and why to use them effectively.

A variety of other rating systems exist for other types of media—video games, computer games, Web sites, etc.—and little research has been published on their accuracy, parents' perceptions of their usefulness, or their effects on children's interest. In addition, many Internet filters have been developed which permit parents or schools to block access to certain types of content. Again, little systematic evidence exists about the impact or effectiveness of these technologies.

Media Literacy and Public Education

Media violence is so popular, pervasive, and easily accessible that attempts to shield children from it are likely to be only partially successful at best. The approach with the greatest promise is public education for parents and media literacy education for children and youth. There have been several efforts to intervene in the effects of media violence on children's aggressive behavior through media literacy curricula. Such curricula have reported some successes for elaborate programs involving multiple training sessions (32) or programs in which children create their own antiviolence videos (33). A recent experiment demonstrated the ability to intervene in the aggression-promoting effect of violent television with simple instructions designed to promote empathy (34). In this experiment, elementary school boys who watched a violent cartoon showed the typical postviewing increase in the endorsement of violent solutions to problems. Another group, who was told to consider the feelings of the character toward whom the violence was directed, showed no such increase. The intervention also reduced the degree to which the children found the cartoon funny.

Recommendations for Future Research

There is ample research evidence that exposure to media violence, especially repetitive exposure to violence as it is most frequently presented in the media, is unhealthy for children and adolescents. This conclusion is not limited to the sensational effects we occasionally observe when young people engage in criminal violence. Rather, it applies to youth in general, who are likely to become increasingly callous, insensitive, accepting of violent solutions, and/or fearful as their violence viewing increases.

Rather than further chronicling the problem, time might better be spent communicating to the public what we already know. Research time, effort, and resources should be devoted to exploring solutions to the problem. The following areas of research are ripe for attention.

1. Media violence research should focus on the effect of different ways of depicting violence, including portrayals that might reduce rather than increase the tendency to imitate or be traumatized by it. We also need to know more about individual differences that predispose youth to be more or less likely to be negatively affected by the violence they see. We especially need to direct attention to the forms of violence that are being portrayed in the newer media, specifically video games, the Internet, and virtual reality systems. In addition to often providing more extreme forms of violence, each of these newer technologies adds something different to the media-reception situation and potentially alters its impact.
2. Continuing research is needed on the impact of the new TV Parental Guidelines and the role of the V-chip in helping families limit their exposure to problematic content. Continuing research is needed on public understanding of the rating system and the V-chip, and on how the V-chip is being used in homes. Such research may be helpful in designing public information campaigns that will address the limitations of the public's

current understanding and will perhaps lead to improvements in the rating system and to the design of better technologies to serve the needs of parents and children. Similar research should be conducted on ratings and filters for other media, such as the Internet and computer and video games.

3. More research is needed on how to intervene in the effects of media violence on youth. This research should range from simple interventions that parents might use to interfere with the likely effects of media violence on young children, to the development of programs for teenagers, which might help them call into question the values of a violent culture. Changing young people's perceptions of violent entertainment may be at the core of any long-term solution to the problem of media violence.
4. Research is also needed on how to educate the public at large and to change attitudes about the issue of media violence. Mass media messages, whether fictionalized dramas, documentaries, public service announcements, or news stories, may become a part of the solution if we learn more about the potential prosocial impact of varying ways of depicting violence.

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