

## **Effects of violent video games on children and adolescents**

There is a serious concern about the effects of violence portrayed in media and video games on children and adolescents. This concern was reflected in recommendations of American academy of pediatricians. In its guidelines for media violence committee recommends that pediatricians must remain aware of the pervasive influence that the wide and expanding variety of entertainment media has on the physical and mental health of children and adolescents.<sup>1</sup> It further recommends pediatricians to incorporate a media history into annual health maintenance examinations. Such is the invasion of media into lives of children and adolescents.

There are many reports of effect of violence in media and video games on aggression and violent behavior. To most researchers, aggressive behavior refers to an act that is intended to injure or irritate another person. Aggression can be physical or non-physical. Violence or aggressive behavior is caused by multiple factors. Exposure to violence in media or even games can become influencing factors. The best single predictor of violent behavior in older adolescents, young adults, and even middle aged adults is aggressive behavior when they were younger.<sup>2</sup> Thus, anything that promotes aggressive behavior in young children statistically is a risk factor for violent behavior in adults as well.

Theoretical explanation of effect of viewing violence in media also explains effect of viewing violence in reality.<sup>3</sup> The short term effects of exposure to media violence are mostly due to 1) priming processes, 2) arousal processes, and 3) the immediate mimicking of specific behaviors. Priming process gives rise to cue related behavior. Observation of specific social behaviors around them increases the likelihood of children behaving exactly that way (mimicking). The neurological process through which this happens is not completely understood, but it seems likely that “mirror neurons,” which fire when either a behavior is observed or when the same behavior is acted out, play an important role.

Long term effects, on the other hand, seem to be due to 1) more lasting observational learning of cognitions and behaviors (i.e., imitation of behaviors), and 2) activation and desensitization of emotional processes. According to widely accepted social cognitive models, a person’s social behavior is controlled to a great extent by the interplay of the current situation with the person’s emotional state, their schemas about the world, their normative beliefs about what is appropriate, and the scripts for social behavior that they have learned. During early, middle, and late childhood children encode in memory social scripts to guide behavior through observation of family, peers, community, and mass media. Consequently observed behaviors are imitated long after they are observed. Repeated exposures to emotionally activating media or video games can lead to habituation of certain natural emotional reactions or “desensitization.”<sup>3</sup>

In a recent meta-analysis where 136 studies were included to give a sample size of 1,30,296 children and adolescents, violent video game exposure was positively associated with aggressive behavior, aggressive cognition, and aggressive affect.<sup>4</sup> These effects were statistically reliable in experimental, cross-sectional, and longitudinal

studies, even when unusually conservative statistical procedures were used. Also violent video game exposure was related to desensitization and lack of empathy and to lack of prosocial behavior. The longitudinal effect of violent video game viewing was somewhat smaller on aggressive affect than on aggressive cognition or behavior. These effects were significant in Eastern as well as Western cultures. There was no evidence that publication (or study selection bias) was responsible for the observed relations between exposure to violent video games and aggressive behavior or the other five outcome variables.

There are arguments for and against the effects of violent video games. Results of another meta analysis did not support the conclusion that violent video game playing leads to aggressive behavior. However, violent video game playing was associated with higher visuospatial cognition.<sup>5</sup>

Many positive effects of video games have been noted. Video games have been found to be effective as analgesic in burns dressing for children.<sup>6</sup>

Lack of consensus on effects of video games makes it clear that caution is required in interpreting the results and drawing conclusions.

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