

Impact of media use on children and youth



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The influence of the media on the psychosocial development of children is profound. Thus, it is important for physicians to discuss with parents their child's exposure to media and to provide guidance on age-appropriate use of all media, including television, radio, music, video games and the Internet.

The objectives of this statement are to explore the beneficial and harmful effects of media on children's mental and physical health, and to identify how physicians can counsel patients and their families and promote the healthy use of the media in their communities.

TELEVISION

Television has the potential to generate both positive and negative effects, and many studies have looked at the impact of television on society, particularly on children and adolescents (1,2). An individual child's developmental level is a critical factor in determining whether the medium will have positive or negative effects. Not all television programs are bad, but data showing the negative effects of exposure to violence, inappropriate sexuality and offensive language are convincing (3). Still, physicians need to advocate continued research into the negative and positive effects of media on children and adolescents.

Current literature suggests the following:

- Physicians can change and improve children's television viewing habits (4).
- Canadian children watch excessive amounts of television (5,6).
- There is a relationship between watching violent television programming and an increase in violent behaviour by children (2,7).
- Excessive television watching contributes to the increased incidence of childhood obesity (8,9).
- Excessive television watching may have a deleterious effect on learning and academic performance (10).
- Watching certain programs may encourage irresponsible sexual behaviour (11).

- Television is an effective way of advertising products to children of various ages (12).

The average Canadian child watches nearly 14 h of television each week (13). By his/her high school graduation, the average teen will have spent more time watching television than in the classroom (2). Studies show how time spent watching television varies between different age groups and cultures (1,13). This is especially relevant when studying the effects of excessive television exposure on disadvantaged populations.

The amount of time that younger North American children currently spend watching television has not decreased significantly (14). A substantial number of children begin watching television at an earlier age and in greater amounts than what experts recommend (15). Evidence suggests that television's influence on children and adolescents is related to how much time they spend watching television (1,2,16). As a result, with prolonged viewing, the world shown on television becomes the real world (1,2).

Television viewing frequently limits children's time for vital activities such as playing, reading, learning to talk, spending time with peers and family, storytelling, participating in regular exercise, and developing other necessary physical, mental and social skills (9). In addition to the amount of time spent in front of the television, other factors that influence the medium's effect on children include the child's developmental level, individual susceptibility and whether children watch television alone or with their parents.

Learning

Television can be a powerful teacher (17). Watching *Sesame Street* is an example of how toddlers can learn valuable lessons about racial harmony, cooperation, kindness, simple arithmetic and the alphabet through an educational television format. Some public television programs stimulate visits to the zoo, libraries, bookstores, museums and other active recreational settings, and educational videos can certainly serve as powerful prosocial teaching devices. The educational value of *Sesame Street*, has been shown to improve the reading and learning skills of its viewers (18). In some disadvantaged settings, healthy television habits may actually be a beneficial teaching tool (17).

Still, watching television takes time away from reading and schoolwork. More recent and well-controlled studies show that even 1 h to 2 h of daily unsupervised television viewing by school-aged children has a significant deleterious effect on academic performance, especially reading (10,19).

Violence

The amount of violence on television is on the rise (20). The average child sees 12,000 violent acts on television annually, including many depictions of murder and rape. More than 1000 studies confirm that exposure to heavy doses of television violence increases aggressive behaviour, particularly in boys (2,21-23). Other studies link television or newspaper publicity of suicides to an increased suicide risk (24-28).

The following groups of children may be more vulnerable to violence on television:

- children from minority and immigrant groups;
- emotionally disturbed children;
- children with learning disabilities;
- children who are abused by their parents; and
- children in families in distress (2,7).

Physicians who see a child with a history of aggressive behaviour should inquire about the child's exposure to violence portrayed on television.

Nutrition

Because television takes time away from play and exercise activities, children who watch a lot of television are less physically fit and more likely to eat high fat and high energy snack foods (9). Television viewing makes a substantial contribution to obesity because prime time commercials promote unhealthy dietary practices (15,29). The fat content of advertised products exceeds the current average Canadian diet and nutritional recommendations, and most food advertising is for high calorie foods such as fast foods, candy and presweetened cereals (14,29). Commercials for healthy food make up only 4% of the food advertisements shown during children's viewing time (8). The number of hours of television viewing also corresponds with an increased relative risk of higher cholesterol levels in children (8). Television can also contribute to eating disorders in teenage girls, who may emulate the thin role models seen on television (8). Eating meals while watching television should be discouraged because it may lead to less meaningful communication and, arguably, poorer eating habits (29,30).

Sexuality

Today, television has become a leading sex educator in Canada. Between 1976 and 1996, there has been a 270% increase in sexual interactions during the family hour of 2000 hours to 2100 hours (31). Television exposes children to adult sexual behaviours in ways that portray these actions as normal and risk-free, sending the message that because these

behaviours are frequent, 'everybody does it'. Sex between unmarried partners is shown 24 times more often than sex between spouses (32-35), while sexually transmitted infections and unwanted pregnancy are rarely mentioned.

Teens rank the media as the leading source of information about sex, second only to school sex education programs. Numerous studies document adolescents' susceptibility to the media's influence on their sexual attitudes, values and beliefs (34,35).

A detailed guide to responsible sexual content on television, and in films and music can be found in other peer-reviewed publications (35).

Some people believe that the media can influence sexual responsibility by promoting birth control, such as condom use. No current empirical evidence supports this concept; it is expected that the debate will continue.

Alcohol and smoking

Canada's two largest breweries spend \$200 million on advertising each year (36). On an annual basis, teenagers see between 1000 and 2000 beer commercials carrying the message that 'real' men drink beer. Convincing data suggest that advertising increases beer consumption (34,37), and in countries such as Sweden, a ban on alcohol advertising has led to a decline in alcohol consumption (38).

Tobacco products are not advertised directly on television in Canada. However, passive promotion occurs when, for example, a soap opera star lights a cigarette in a 'macho' act, a Formula One race car has cigarette advertising on it or sporting events carry the names of tobacco companies. There is evidence that passive advertising, which glamorizes smoking (28), has increased over the past few years.

Television is not the only way that children learn about tobacco and alcohol use; the concern is that the consequences of these behaviours are not accurately depicted on television. One-half of the G-rated animated feature films available on videocassette, as well as many music videos, show alcohol and tobacco use as normative behaviour without conveying the long term consequences of this use (39).

Advertising

Advertising can have positive effects on children's behaviour. For example, some alcohol manufacturers spend 10% of their budget on advertisements warning about the dangers of drinking and driving. In addition, although some health care professionals disagree about the health benefits of appropriate milk use, milk consumption has increased as a result of print and broadcast advertisements.

The developmental stage of a child plays a role in the effect of commercials. Young children do not understand the concept of a sales pitch. They tend to believe what they are told and may even assume that they are deprived if they do not have advertised products. Most preschool children do not understand the difference between a program designed to entertain and a commercial designed to sell. A number of studies have documented that children under the age of eight years are developmentally unable to under-

stand the difference between advertising and regular programming (12,40,41).

The average child sees more than 20,000 commercials each year (12). More than 60% of commercials promote sugared cereals, candy, fatty foods and toys (12). Cartoon programs based on toy products are especially attractive. Advertisements targeting adolescents are profoundly influential, particularly on cigarette use (4).

The question of whether children are more resilient to the influence of television is debated frequently. Most studies show that the more time children spend watching television, the more they are influenced by it (4). Earlier studies have shown that boys may be more susceptible than girls to television violence (25).

Education and parental involvement

High school programs promoting media awareness have been shown to be beneficial (4). They give students more understanding of how the media may affect them socially. In Canada, the Media Awareness Network has a number of resources that can be used by both professionals and the public to promote media literacy. Their resources are comprehensive, current and specifically applicable to Canadian culture (42).

Parents may use ratings but they must be used with caution. Currently, there is no consensus as to which rating system works best (43). Parental involvement in determining desirable programming is the best choice. Parents have to monitor and control their children's viewing habits.

Studies show that parents play an important role in their children's social learning (44), but if a parent's views are not discussed explicitly with children, the medium may teach and influence by default. Other media, such as magazines, radio, video games and the Internet, also have the potential to influence children's eating habits, exercise habits, buying habits and mental health. If children are allowed to be exposed to these media without adult supervision, they may have the same deleterious effects as television.

MUSIC VIDEOS

Music videos may have a significant behavioural impact by desensitizing viewers to violence and making teenagers more likely to approve of premarital sex (45). Up to 75% of videos contain sexually explicit material (45), and more than half contain violence that is often committed against women. Women are portrayed frequently in a condescending manner that affects children's attitudes about sex roles.

Attractive role models are the aggressors in more than 80% of music video violence. Males are more than three times as likely to be the aggressors; blacks were overrepresented and whites underrepresented. Music videos may reinforce false stereotypes. A detailed analysis of music videos raised concerns about its effects on adolescents' normative expectations about conflict resolution, race and male-female relationships (46).

Music lyrics have become increasingly explicit, particularly with references to sex, drugs and violence. Research

linking a cause-and-effect relationship between explicit lyrics and adverse behavioural effects is still in progress at this time. Meanwhile, the potential negative impact of explicit music lyrics should put parents and paediatricians on guard — paediatricians should bring this up in anticipatory guidance discussions with teenagers and their parents. At the very least, parents should take an active role in monitoring the music their children are exposed to (45).

VIDEO GAMES

Some video games may help the development of fine motor skills and coordination, but many of the concerns about the negative effects of television (eg, inactivity, asocial behaviour and violence) also apply to excessive exposure to video games. Violent video games should be discouraged because they have harmful effects on children's mental development (7,47). Parents should be advised to familiarize themselves with various rating systems for video games and use this knowledge to make their decisions.

The effect of violent video games on children has been a public health concern for many years. No quantitative analysis of video game contents for games rated as suitable for all audiences was made until 2001 (47). The study concluded that many video games rated as suitable for all audiences contained significant amounts of violence (64% contained intentional violence and 60% rewarded players for injuring a character). Therefore, current ratings of video games leave much room for improvement (43).

INTERNET

Parents may feel outsmarted or overwhelmed by their children's computer and Internet abilities, or they may not appreciate that the 'new medium' is an essential component of the new literacy, something in which their children need to be fluent. These feelings of inadequacy or confusion should not prevent them from discovering the Internet's benefits. The dangers inherent in this relatively uncontrolled 'wired' world are many and varied, but often hidden. These dangers must be unmasked and a wise parent will learn how to protect their children by immersing themselves in the medium and taking advice from the many resources aimed at protecting children while allowing them to reap the rich benefits in a safe environment. The physician is in a good position to encourage parents and children to discover the Internet and to use it wisely.

The Internet has a significant potential for providing children and youth with access to educational information, and can be compared with a huge home library. However, the lack of editorial standards limits the Internet's credibility as a source of information. There are other concerns as well.

The amount of time spent watching television and sitting in front of computers can affect a child's postural development (48). Excessive amounts of time at a computer can contribute to obesity, undeveloped social skills and a form of addictive behaviour (9). Although rare, some children with seizure disorders are more prone to attacks brought on by a flickering television or computer screen. No data sug-

gest that television viewing causes weakness of the eyes. It may be different when a child is closely exposed to a computer screen for long periods, although there are no definitive references to support this.

Other concerns include pedophiles who use the Internet to lure young people into relationships. There is also the potential for children to be exposed to pornographic material. Parents can use technology that blocks access to pornography and sex talk on the Internet, but must be aware that this technology does not replace their supervision or guidance.

There is a wealth of information on coping with the vast resources of the Web, both good and bad. Above all, parents should be encouraged to appreciate that there is potential for more good than bad, as long as one has the knowledge to tell the difference. Canadian youth claim the Internet as a defining part of their culture and an integral part of their daily lives (6). Physicians and parents alike must be armed and

ready to face that challenge and ensure that they reap the potential benefits as safely as possible (Table 1).

RECOMMENDATIONS

- Physicians should regularly inquire about media habits when taking a psychosocial history, using the Media History Form developed by the Canadian Paediatric Society (CPS) and the Media Awareness Network (51). They should also ask about video watching, use of video games, radio programs and time spent in front of the computer, especially when dealing with aggressive and particularly vulnerable children and families (7).
- Physicians should become more familiar with the kinds of media to which their patients may be exposed, such as programs that portray irresponsible sex and violence, and questionable Internet sites.

Table 1
Benefits and risks of Internet use by children and youth

Benefits of the Internet

- Near limitless information resource
- High degree of availability and affordability in most communities in the western world
- An asset for research or homework
- A communication tool for teachers and university professors with their students
- Rapid and inexpensive communication via e-mail and video linkage
- Access by the disabled to much that may otherwise be unavailable:
 - Through technology that makes computer use possible
 - By taking advantage of communication with peers that does not require that their disability be visible
- Source of entertainment

General risks

- The Internet, by its interactive nature, is prone to use for excessive periods of time. 'Internet addiction', also known as pathological Internet use or Internet addiction disorder, is a known problem among adults and is no less a problem with children whose usage may be unlimited (30,49,50)
- Instant messaging and e-mail may interfere with legitimate work (schoolwork and in the workplace)
- Like television, excessive time spent on the Internet may interfere with normal socialization between child and peers, and with family
- Excessive use fosters inactivity and, potentially, obesity

Misinformation

- Lack of monitoring for appropriateness or accuracy of information
- Health risks posed from following incorrect information
- Fostering inappropriate ideas for children and teenagers such as the following:
 - Encouraging inappropriate weight loss and diets. To read more on this, see www.eating-disorder.org/prosites.html or my.webmd.com/content/article/34/1728_85382
 - Generating a sense of need to acquire material goods
 - False advertising or scams typically spread by e-mail
 - Temptation to acquire (or steal) credit cards to pay for on-line services

Adverse effects on values

- Pornography: Underage children may accidentally or by design access pornographic sites
 - Predators have access to minors through unsupervised use of chat rooms and e-mail
 - Loss of inhibitions normally experienced when face-to-face, promoting sexual exchanges and promiscuity
 - On-line gambling
 - Potential for plagiarism in school work
 - Promotion of hatred or violence through Web sites targeting a specific group, such as women, homosexuals, and religious or ethnic groups
 - Use of the Internet by school bullies to ridicule or spread hatred toward a victim
 - Violence through video games, song lyrics and on-line bullying, access to hazardous materials or information on making weapons
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- Physicians should make parents aware of the significance of television early in a child's life. By the end of the first year of a child's life, there should be ground rules for television viewing and healthy viewing habits should be established in the second year of life. Patient education tools developed by the CPS and the Media Awareness Network can be used to supplement teaching. Visit www.caringforkids.cps.ca for more information.
- Physicians should continue to increase their own level of awareness about the most recent data on the influence of media on the development of their patients' psychosocial health (www.media-awareness.ca is one of the most comprehensive Canadian resources for further education).
- Physicians are encouraged to learn about the scope of Internet-related issues to adequately advise parents during their visits for anticipatory guidance. The Media History Tool (51) can be used to identify areas of concern and to facilitate discussion with parents and children. They can be encouraged to develop a family agreement for on-line use at home. The Media Awareness Network Web site (www.media-awareness.ca) has suggestions on how to do this.

Physicians should encourage families to do the following:

- Families should be encouraged to explore media together and discuss their educational value. Children should be encouraged to criticize and analyze what they see in the media. Parents can help children differentiate between fantasy and reality, particularly when it comes to sex, violence and advertising.
- No child should be allowed to have a television, computer or video game equipment in his or her bedroom. A central location is strongly advised with common access and common passwords.
- Television watching should be limited to less than 1 h to 2 h per day. Families may want to consider more active and creative ways to spend time together.
- Older children should be offered an opportunity to make choices by planning the week's viewing schedule

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in advance. Ideally, parents should supervise these choices and be good role models by making their own wise choices. Parents should explain why some programs are not suitable and praise children for making good and appropriate choices.

- Families should limit the use of television, computers or video games as a diversion, substitute teacher or electronic nanny. Parents should also ask alternative caregivers to maintain the same rules for media use in their absence. The rules in divorced parents' households should be consistent.

Physicians who want to get involved in their communities can consider the following:

- Provide parents with resources and information to promote media awareness programs in their communities and schools. The Media Awareness Network (www.media-awareness.ca) has resources and research reports for parents, teachers, teenagers and others.
- Promote the implementation of high school programs in media awareness, which have proven to be beneficial (4).
- Express support for good media. In addition to writing to stations that broadcast responsible and good television programs, physicians and parents can support legislation that encourages more responsible media use.
- Support efforts to eliminate alcohol advertising on television with the same enthusiasm that led to the elimination of tobacco advertising.
- Consider accepting invitations to talk to parent groups, school boards and other organizations about the impact of media on children and youth. The American Academy of Pediatrics and the Media Awareness Network have kits that include a fully scripted text, colourful slides, a fact sheet and audience handouts. Visit www.cps.ca or www.media-awareness.ca for more information.
- Support further research on the impact of media on the mental and physical well-being of children and adolescents.

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The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.