



Editorial

On the impact of television on young people

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I wandered out of the bedroom about 6am on a Saturday morning several weekends ago, and greeted two of my grandchildren aged five and three, both curled up on a settee watching the television. No response. I moved in closer to sit down and give the older one a hug, and she sort of responded, but kept her head to one side, eyes glued to the screen. The younger one seemed half asleep, mesmerised by the images. So I moved on. About half an hour later a physical fight broke out over the choice of cartoon program; hair was pulled, scratches occurred, tears shed, and the older one left to complain about her little brother to her mother. Yet again it made me reflect on the wisdom of putting in a wide screen and attaching it to a Foxtel box. On the one hand we adults all get a little more sleep at the weekends but perhaps at the temporary expense of a meaningful relationship. And both of my grandchildren can sing classical tunes remembered from the Baby Einstein series – which is good fun and highly educational (but comes with an American accent). But exactly what does several hours a day of flashing lights and wizardry do to the growing brain of a small child? Will television watching at a young age lead to a life long obsession with watching a screen? Are younger people more vulnerable to the messages and adverts that pour off the screen, and do these messages represent the values of parents or grandparents?

By the age of three, the older grandchild, having recently returned permanently from the UK, could switch on the computer, click on a browser and find CBBs, an English children's site she

knew which is full of games and fun with stories and rhymes with music. 'Isn't she clever?' we all exclaimed. But at the back of my mind lurks a raging argument that I wish I could resolve. If the way of the future is through electronic media and media skill (at least until the electricity all runs out), then my granddaughter will be in the race, and we should encourage her efforts and broaden her skill. But is it all that simple? It could be crucial to the future of young people to have the requisite skills. It is possible, of course, that they will grow through their current passion with things electronic, and move on – in the way that children often do when learning to play an instrument. One day they are passionate about the violin, and allow the family to enjoy their new found skill, another day and they have moved on to the drums, or tired altogether of the need for practice. They may just use the skills when appropriate, like you and I when we 'Google' a person's name, a paper or a new idea. But my worry is that they may become obsessed and use the Internet as a way of avoiding anxious aspects of daily life.

And then there are the recent worrying discussions about online contact lists (for instance MySpace and Facebook). MySpace has recently apparently been able to recognise up to 27,000 paedophile addresses in its listings. Does this mean that our cleverness in developing the Internet and the web will increasingly expose our children and grandchildren to predators online?

I have had a long term interest in the influence of media on young people (Martin, 1990, 1996, 1998). However, I was reminded of the problems

forcefully the other day in a discussion about a complaint that had been lodged against a worker who spent a considerable part of his work day online exploring his 'second life' to the detriment of his first life and his work output. This is what Michael Hong has named 'Internet Addiction' (see Lee, Oh, Cho et al., 2001), and there do appear to be serious and growing problems in this area. There are lots of questions to be answered if 'addiction' is the right word. If a child has a gene for addictive personality, and/or the set of circumstances to bring out their addiction, then could Internet addiction be an early sign of later addictions, and could it be used for early intervention purposes to build in protections against later chemical addiction?

It is timely then to consider several recent papers published by the *Archives of Pediatrics*. First, though, we need to note the American Academy of Pediatrics (2001) consensus statement that reported on the then facts and figures to do with children's viewing, and then described the possible negative health effects of television viewing on children and adolescents, such as violent or aggressive behaviour, substance use, sexual activity, obesity, poor body image, and decreased school performance. They did acknowledge some positive aspects of viewing, but predominantly came down on the side of television having long term negative impacts. Their recommendations were, among other things, for media education both for young people and their parents, limiting the time children spend watching television, removing television from the bedrooms of young people, and for the use of the v-chip to control the types of programs that children watched.

An early paper by the Johnson group (Johnson, Cohen, Kasen et al., 2004) examined sleep disorders in adolescents and young adults. The work is based on the Children in the Community Study, a prospective longitudinal epidemiological investigation of 759 New York families when their adolescents were 14, 16, and 22 years. Adolescents who watched three or more hours of television a day during adolescence were at a significantly increased risk of frequent sleep problems by early adulthood. This remained significant after age, sex, previous sleep problems, psychiatric disorders, neglect, parental educational level, parental annual

income, and parental psychiatric symptoms were controlled statistically. Adolescents who reduced their television viewing to less than one hour per day gained a significant reduction in sleep problems.

In an often quoted study, Clare McCarty's group (see Christakis, Zimmerman, DiGiuseppe & McCarty, 2004) used the US National Longitudinal Study of Youth to examine the hyperactivity subscale of the Behavioral Problems Index in participants at age seven, comparing with hours of television watched daily at ages one and three years. Ten percent of children had attentional problems at age seven. In a logistic regression model, hours of television viewed per day, at both ages one and three, was associated with attentional problems at age 7 (odds ratios 1.09 [1.03–1.15] and 1.09 [1.02–1.16] respectively). They concluded that television viewing in young children was associated with later attentional problems. Based on this study, many authors have subsequently suggested that television may have some impact on the 'wiring' of the brain that may lead to ADHD.

Hancox, Milne & Poulton (2005) studied educational achievement at 26 years of age in the Dunedin prospective birth cohort study of 1,000 unselected individuals born between April 1, 1972, and March 31, 1973. Similar for men and women, increased television viewing during childhood (ages 5-11 years) and adolescence (ages 13 and 15 years) had adverse associations with later educational achievement. Increased adolescent viewing was a stronger predictor of leaving school without qualifications, whereas childhood viewing was a stronger predictor of not getting a university degree.

A later paper by Johnson, Cohen, Kasen & Brook (2007) looks at the same area of educational attainment. It is based on the same Children in the Community Study as their 2004 study, but on this occasion with a reduced sample (628) of the New York families. Young people who watched one or more hours of television per day at mean age 14 years were at elevated risk for poor homework completion, negative attitudes toward school, poor grades, and long term academic failure. Those watching three or more hours of television a day were at increased risk for subsequent attention problems

and were the least likely to receive post secondary education. The authors' careful longitudinal work suggests that the television watching had a direct causal effect rather than reflecting prior history.

There is now a large body of longitudinal work suggesting that high television usage in childhood leads to obesity and poor food choices in adolescence (e.g., Jago, Baranowski, Baranowski et al., 2005; Proctor, Moore, Gao et al., 2003; Salmon, Campbell & Crawford, 2006).

Finally, recent work suggests that adolescents who watch lots of television may be put in danger of early sexual activity. Sarah Ashby and her colleagues (Ashby, Arcari & Edmonson, 2006) drew on the US National Longitudinal Study of Adolescent Health data from 1994-1996 on 4,808 students younger than 16 years who had not initiated intercourse before baseline interview. By 1-year follow-up, 791 (15.6%) subjects had initiated intercourse, despite strong parental disapproval. Sexual initiation was associated with high television use (adjusted odds ratio, 1.35) - usually unmonitored television use.

There is hope we can intervene, and of interest the strongest effects may be in the realm of the school. Jason Fletcher (2006) also used the National Longitudinal Study of Adolescent Health. He set out to examine whether social interactions influence the television viewing choices of 4,532 students in grades 7 through 12 in 132 US public and private schools. The number of hours of television that adolescents reported viewing per week was associated with their peers' reported hours of television viewing. A one hour increase in average school-level television viewing was associated with an extra half an hour of television viewing at the individual level. This suggests that social interactions within schools influence the hours of television that adolescents report viewing and, by implication, that interventions affecting the social norms of television viewing within schools could also change individual television viewing.

This little selection of papers provides some cogent evidence that television watching can be harmful in many ways. There is considerable other work in this field, and little of it shows positive outcomes. High levels of television

watching (more than 3 hours a night) affect sleep, increase the likelihood of poor attention, certainly appear to have strong implications for learning and educational attainment, and may influence choices – for instance dietary intake and sexual initiation. There is good evidence that it may lead to a familiarity with or even an addiction to the small screen, and this can have life long implications. The hopeful note is provided by the Fletcher paper, suggesting that education at the school level to influence peers may reduce hours of watching, and therefore some of the sequelae. The 2001 Pediatrics guidelines, while appearing somewhat draconian, remain important and relevant. The advice we (as professionals) should be giving to families is to reduce the hours of watching overall, be careful what they allow young people to watch (i.e., monitor) and not give them free access (e.g., a TV in their bedroom), discuss what they have seen most recently, and provide them with guidance according to family norms.

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