

Electronic Device and Internet Use-Related Hazards to the Social, Psychological, and Spiritual Development of Our Children and Young People

**I. The use of the Internet and electronic devices by younger children:**

- A. Trends 2011-2013: Common Sense Media (SF non-profit) in 2013:
  - 1. Among families with children age 8 and under, there has been a five-fold increase in ownership of tablet devices such as iPads, from 8% of all families in 2011 to 40% in 2013. The percent of children with access to some type of “smart” mobile device at home (e.g., smartphone, tablet) has jumped from half (52%) to three-quarters (75%) of all children in just two years.
  - 2. Seventy-two percent of children age 8 and under have used a mobile device for some type of media activity such as playing games, watching videos, or using apps, up from 38% in 2011.
  - 3. Thirty-eight percent of children under two years of age have used a mobile device for media (compared to 10% two years ago).
  - 4. The percent of children who use mobile devices on a daily basis – at least once a day or more – has more than doubled, from 8% to 17%.
  - 5. The amount of time spent using these devices in a typical day has tripled, from an average of five minutes a day among all children in 2011 up to fifteen minutes a day in 2013.
- B. In a UCLA study, sixth-graders self-reported that they spent an average of more than four hours on a typical school day texting, watching television, and playing video games.
- C. Impairment of direct parent-child interaction.
- D. Social intelligence -- ability to register expressions of emotion by others:
  - 1. Sixth-graders who went five days without exposure to technology were significantly better at reading human emotions than those who had regular access to phones, televisions, and computers. *Computers in Human Behavior: (UCLA) 2018*
  - 2. "When babies are babies, they're learning about human interaction with face-to-face time and by speaking to parents and having things they say modeled back to them ... that need doesn't go away." M. Hogan, M.D.; American Academy of Pediatrics
- E. Speech development.
- F. Adverse effects upon sleep quality.
- G. Effects on mood and personality:
  - 1. Children (and teens) who persistently logged on to Facebook were more likely to present with psychological issues such as mania, paranoia, aggressiveness, antisocial behavior, narcissism, and/or substance use.
  - 2. Children who regularly use the Internet and play video games exhibit more anxiety and depression than those who do not.
- H. Sedentarism and obesity.
- I. Loss of interest in toys, other forms of play, and in outdoors activities.

- J. The development of reading skills.
- K. Potential effects on central nervous system development.
- L. Possible predisposition to addictive disorders.
- M. Impaired capacity to delay gratification, patience.
- N. Profile of aggressivity as a result of exposure to scenes of violent acts and weapons:
  1. Approximately 90% of movies include some depictions of violence, as do 68% of video games, 60% of TV shows, and 15% of music videos. (Wilson, 2008)
  2. The average child sees 12,000 violent acts on television annually, including many depictions of murder and rape.
- O. Impact on early alcohol and tobacco use:
  1. Adolescents view between 1000 and 2000 beer commercials carrying the message that “real” men drink beer; convincing data suggest that such advertising increases beer consumption.
- P. Formation of sexual values and norms:
  1. Media present adult sexual relations to children in a way that suggests that such relationships are without risk or consequences.
  2. Portrayals of sexual contact between non-married adults are 24 times more frequent than between married adults.
  3. Validation and encouragement of homosexuality.
- Q. Additional matters, including a more materialistic orientation, poorer posture.
- R. Some considerations:
  1. “Screen time” should be limited to two hours a day for children ages 3-18. And for 2-year-olds and younger, none at all. (AAP)
  2. Internet and digital device usage should be monitored and, as much as possible, devices should be used in residence common-use areas.
  3. No bedroom television.

## **II. Supplemental matters related to the use of the Internet and electronic devices by young people and college students:**

- A. Anyone can be susceptible to excessive Internet usage and its complications:
  1. Ryan van Cleave: a university professor whose life declined as he became involved in online gaming.
  2. Andrew Doan, M.D., Ph.D.: a physician with a research background in neuroscience who battled his own addictions with video games, having invested an estimated 20,000 hours in playing games over a nine-year period.
- B. Usage reaches a point that its results correspond to definitions of addiction:
  1. General definition.
  2. Depressive or impulsive traits.
  3. Difficulty with personal interactions.
  4. Preoccupation, tolerance, lying regarding usage, and conflict directly resulting from usage.

5. Loneliness and isolation; may have difficulty distinguishing “real time” vs. “virtual” friends.
  6. Withdrawal symptoms:
    - a. Internet addicts are more likely than non-addicts to experience withdrawal symptoms following a brief 15-minute exposure.
    - b. A pronounced decline in mood prompts addicts to promptly reengage in the Internet.
  7. The impact of frequent, short-duration exposures.
- C. The prevalence of Internet use and/or videogame addiction:
1. Video games, social media, smartphone usage, texting, streaming videos, and online pornography have all demonstrated addictive potential.
  2. Videogame addiction, including massive multiplayer online games, presents the highest profile among Internet addictions.
  3. Prevalence projections vary widely, but may be as high as 27%.
  4. Youths aged 13-18 spend more than 6.5 hours of daily screen time, compared to those aged 8-12 who spend more than 4.5 hours.
- D. Identification:
1. The diagnostic criteria are analogous to those utilized for substance use and gambling disorders.
  2. Screening instruments--One instrument includes a 0-4 point rating on three items: 1) Experiences social anxiety related to a preference for Internet use to the exclusion of real-life relationships, 2) feels withdrawal when not using the Internet, and 3) loses motivation to do other things that need to get done because of the Internet.
  3. Interview to detect “red flags”: academic decline, sleep disruption, and change in real life activities and relationships.
  4. Predisposing factors: novelty seeking, depression, alcohol use, anxiety, and profile of poor parental and psychological support. Fragmented nuclear family, aggressiveness, poor social adjustment, avoidant behaviors, low empathy, poor school performance, status as a student, and cyberbullying all correlate with Internet gaming addiction and attention deficit disorder.
- E. Reinforcing/rewarding factors of video gaming:
1. Ability to present oneself in an idealized fashion.
  2. Non-threatening socialization.
  3. Competition and rank/status achievement.
  4. The fear of “missing out.”
- F. Associated conditions:
1. Depression.
  2. Anxiety.
  3. Bipolar mood disorder.
  4. Personality disorders.
  5. ADHD and Autism spectrum.
  6. Alexithymia.

7. Sexual abuse history.
- G. Impact upon sleep: reduction in total sleep time, delayed induction of sleep, decreased sleep quality, excessive daytime sleepiness; the effect of global time-zone differences.
- H. The neurobiology of Internet video-gaming addiction:
  1. The “dual processing model”:
    - a. The “go network” (also the reactive, RaS system) mediates immediate outcomes from behavior.
    - b. The “stop network” (also called the reflective, RiS system) provides inhibitory control based upon learned projections.
  2. Dopamine and dopamine agonist medications stimulate the “go network,” causing addictive behaviors, such as abuse of substances, gambling, binge eating, and hyper-sexuality.
  3. Imaging studies show that “stop network” regions regulate impulse control and executive function, and appear to provide the ability to envision and establish long-term goals; these areas appear to be involved in regulating online habits.
  4. The developing brain in adolescents has a tendency toward imbalance in these systems, which is not seen in adult brains.
  5. Video gaming has been shown to cause release of dopamine in the nucleus accumbens, the brain area that mediates pleasure, in a magnitude similar to that caused by recreational drug abuse.
  6. Imaging studies: MRI, fMRI, PET.
  7. Neurocognitive testing demonstrates that impulse control findings with excessive video game usage parallels that seen in cocaine users, and correlates with specific neuroimaging findings.
- I. Sexually inappropriate content.

Outline prepared by Richard Scatterday, M.D.  
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