

Early Television Exposure and Subsequent Attentional Problems in Children

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FROM ABSTRACT

Objective. Cross-sectional research has suggested that television viewing may be associated with decreased attention spans in children.

However, longitudinal data of early television exposure and subsequent attentional problems have been lacking.

The objective of this study was to test the hypothesis that early television exposure (at ages 1 and 3) is associated with attentional problems at age 7.

Methods. We used the National Longitudinal Survey of Youth, a representative longitudinal data set. Our main outcome was the hyperactivity subscale of the Behavioral Problems Index determined on all participants at age 7. Children who were >1.2 standard deviations above the mean were classified as having attentional problems.

Our main predictor was hours of television watched daily at ages 1 and 3 years.

Results. Data were available for 1278 children at age 1 and 1345 children at age 3.

Ten percent of children had attentional problems at age 7.

In a logistic regression model, hours of television viewed per day at both ages 1 and 3 was associated with attentional problems at age 7 (1.09 [1.03–1.15]{**9% with a range of 3-15%**} and 1.09 [1.02–1.16]{**9% with a range of 2-16%**}), respectively.

Conclusions. Early television exposure is associated with attentional problems at age 7.

Efforts to limit television viewing in early childhood may be warranted, and additional research is needed.

THESE AUTHORS ALSO NOTE:

"Attention-deficit/hyperactivity disorder (ADHD) affects between 4% and 12% of US children and is the most common behavioral disorder of childhood."

Surprisingly little is known about the cause and development of ADHD.

There is an underappreciation of the crucial role that early childhood experiences have on the development and modulation of ADHD.

"It is widely known that the newborn brain continues to develop rapidly through the first few years of life and that considerable plasticity exists during this period."

The types and degrees of environmental stimulation affect the number and the density of neuronal synapses. **[IMPORTANT]**

"The types and intensity of visual and auditory experiences that children have early in life therefore may have profound influences on brain development."

"In contrast to the pace with which real life unfolds and is experienced by young children, television can portray rapidly changing images, scenery, and events."

"It [TV] can be overstimulating yet extremely interesting."

"This has led some to theorize that television may shorten children's attention spans," and that it may lead to ADHD.

Television viewing later reduces reading and concentration.

"The American Academy of Pediatrics recommends that parents exercise caution in letting their children under the age of 2 years watch television."

[American Academy of Pediatrics Committee on Public Education. Media education. *Pediatrics*. 1999;104:341-343][We reviewed this article in 1999]

These authors "hypothesized that very early exposure to television during the critical periods of synaptic development would be associated with subsequent attentional problems.

Television viewing hours ranged between 0 and were capped at 16 hours.

RESULTS

"Children watched an average of 2.2 hours of television per day at age 1 and 3.6 hours per week at age 3."

10% of children at ages 1 and 3 had attentional problems.

“Controlling for all of the previously listed covariates, television hours watched per day at both age 1 and age 3 were associated with having attentional problems at age 7 (1.09 [1.03–1.15]{**9% with a range of 3-15%**} and 1.09 [1.02–1.16]{**9% with a range of 2-16%**}), respectively.”

DISCUSSION

“We found that early exposure to television was associated with subsequent attentional problems.”

“This finding was present even while controlling for a number of potential confounding factors, including prenatal substance use and gestational age, measures of maternal psychopathology, and socioeconomic status.”

“The magnitude of the risk associated with television viewing, expressed in our analysis in terms of hours per day of television viewed, is clinically significant when one considers the full range of hours of television viewed in our sample (0–16).”

“A 1-SD increase in the number of hours of television watched at age 1 is associated with a 28% increase in the probability of having attentional problems at age 7.” **[WOW!]**

“This result is robust and stable over time—a similar effect size is obtained for the number of hours of television watched at age 3.”

These authors “added inattention to the previously studied deleterious consequences of excessive television viewing, including violent behavior and obesity.”

“Limiting young children’s exposure to television as a medium during formative years of brain development consistent with the American Academy of Pediatrics’ recommendations may reduce children’s subsequent risk of developing ADHD.”

KEY POINTS FROM DAN MURPHY

- 1) Attention-deficit/hyperactivity disorder (ADHD) affects between 4% and 12% of US children and is the most common behavioral disorder of childhood.
- 2) Age 1 children watched an average of 2.2 hours of television per day.
- 3) The range of television viewing in this study was 0–16 hours per day.
- 4) Television watching by 1 and 3 year olds increased ADHD by up to 15-16%.
- 5) Early television exposure is associated with attentional problems at age 7.
- 6) Parents should minimize television viewing in early childhood.

- 7) The newborn brain develops rapidly through the first few years of life and that significant plasticity exists during this period.
- 8) Environmental stimulation affects the number and the density of neuronal synapses.
- 9) Visual and auditory experiences that children have early in life have profound influences on brain development.
- 10) The rapid changing of images, scenery, and events, on television is different than real life. Television is overstimulating yet extremely interesting. This damages the wiring of the brain to the detriment of the child.
- 11) Television shortens children's attention spans, reduces reading and concentration abilities.
- 12) In 1999, The American Academy of Pediatrics recommended that children under the age of 2 years not watch television.
- 13) A 1 standard deviation increase in the number of hours of television watched at age 1 is associated with a 28% increase in attentional problems at age 7."
- 14) Children television watching increases ADHD, violent behavior, and obesity.