

REVIEW ARTICLE

LANGUAGE DEVELOPMENT AND TELEVISION EXPOSURE IN CHILDREN

Dwi Herawati Ritonga, Sri Sofyani

Department of Child Health, Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia

ABSTRACT

Language development is an indicator for all of child development. In general, there are two main factors that influence language development: genetic factors and environmental factors. Television is a part of environmental factor. Repeated exposure to television can affect child language development. There are very few studies on the relationship between television exposure and language development in children. In some studies it was reported that television exposure had a positive impact on cognitive development and language in children. Meanwhile, in other studies it was reported that there was no significant impact between television exposure time and language ability in children. High television exposure in first year of life is related to lack of attention in school. Violent television exposure may also result in a child experiencing a behavioral disorder. However, age-appropriate educational television programs can teach new vocabulary to children. Thus, effect of television exposure and its effect on language development still needs to be further evaluated.

Introduction

Child development is a qualitative and quantitative change. Language development is one of the most important development in children, because it is an indicator for all of child development. (1) Language skill is sensitive to delays or abnormalities in other systems, such as cognitive, sensorimotor, psychological, emotional and environmental abilities around the child. As with any other development, the first years of life are very important in child language development. In general, there are two main factors that influence language development: genetic factors and environmental factors. Environment is a factor that determines genetic potential achievement. A good environment will enable the achievement of genetic potential and vice versa. One of environmental factors that influences child development is television. (2)

Television is a mass media widely used in the world. (3) Nowadays, television has reached more than ninety percent of the population in developing countries. (4) Although television is the most widely used mass media in homes, the relationship between television exposure and language development in children remains unclear. In some studies it was reported that television exposure had a positive impact on cognitive development and language in children. (5,6) Meanwhile, in other studies it was reported that there was no significant impact between television exposure time and language ability in children. (7-9) But all previous studies still have limitations, including the limited number of samples and

CONTACT Dwi Herawati Ritonga

Email : dwiherawatiritonga@gmail.com

Address for Correspondence: Dwi Herawati Ritonga Jl. Bunga Lau No.17 Medan, Sumatera Utara, Indonesia – 20136.

©2018 Pediatric Oncall

ARTICLE HISTORY

Received 13 February 2018

Accepted 03 September 2018

KEYWORDS

Language development, television, children

the number of confounding factors in the study. (10)

Language development

Language is a communications system used voluntarily and socially, using certain symbols to convey and receive messages from one person to another. (2,11) There are two types of language skills: receptive and expressive language. Receptive language is the ability to understand including reading, sign language, comprehension and listening comprehension. Whereas, expressive language is the ability to produce communication symbol including writing and signing as visual output and speech as auditory output. (2) Left hemisphere is the language center of 94% of right-handed adult and over 75% in left-handed. There are three main areas in a child's left hemisphere: Broca's area and motor cortex in anterior, and Wernicke's area in posterior part. Information derived from the primary and secondary auditory cortex is transmitted to the posterior temporoparietal cortex (Wernicke's area). This information is then matched to previously saved memories, formulated and transmitted by the fasciculus arcuatus to the anterior portion of the brain, for coordination of motor responses (Brocca's area). (2)

Factors affecting language development

There are some factors that affect language development in children namely physical readiness, mental readiness, good imitation model, chance for practicing language, motivation and guidance.

Television exposure

Television is one of communicative media served using pictures and voices which affects senses of sight and hearing. (13,14) Repeated television exposure could affect the child's development. High television exposure in first year of life is related to lack of attention in school especially with language

and reading. If television is used as a substitute for reading and talking with others at a young age, children will experience language development disorders. (15-17) In addition, high television exposure also raises attention issues and decrease in planning and judging capabilities. Violent television exposure may also result in a child experiencing a behavioral disorder. (18,19) The American Academy of Pediatrics (AAP) in its 2001 publication recommends the following about television exposure in children, including (17) :

- Television exposure time is limited to no more than one to two hours per day
- Do not put the television in a child's room.
- Reduce exposure to children under two and increase interactive activity that affects brain development such as talking, playing, singing and reading together
- Keep an eye on children while watching television. Television programs should be educative, informative and non-violent.
- Watch television with the child and discuss the content.
- Use controversial television programs as material for discussions on family meaning, violence, sexuality and drugs.
- Use a video recorder wisely to show recording of quality educational programs for children.

Characteristics of Television Programs Influencing Language Development

The impact of television exposure in each age group is different. The vocabulary of the language is the center of attention in many studies and is influenced by age-appropriate content, exposure to new and familiar languages, frequent exposures, the possibility of interaction and the presence of adult accompaniments while watching television. Age-appropriate educational television programs can teach new vocabulary to children even in the absence of accompanying adults. Even so, the presence of a companion while watching television can improve language skills. (20,21)

Quantity of Television Exposure Affecting Language Development

Some studies suggest that there is a correlation between low language proficiency in pre-school age children with high adult television program exposure and child entertainment programs such as commercial cartoons. (22,23) While in some other studies it was found that children's entertainment television programs did not have a negative impact on language development but there was a relationship between children who watched commercial cartoons with high general television exposure. (5,23,24) This high television exposure relates to low language skills. It is not clear from the existing studies what happens to situations where children do not watch television for long periods of time. (25)

The relationship between television exposure and language development in children

Although it has been clear that children can learn a variety of behaviors from television such as aggressive

behavior and the introduction of numbers and letters, it is still a debate about the effectiveness of television in teaching the language to children. (26-30) The relationship between television exposure and language development in children has not been clear. There are several reasons for this lack of studies. First, it is more difficult and more time-consuming tests for very young children. Second, until the last decade, television was generally designed for verbally prepared children. Therefore, the effects of television on preverbal children are still debated. (31) When children listen to talk directly from adults or television, they may be able to learn new words. However, it may also be that visual-based television does not offer sufficient input for early childhood learning.(31) Some evidence suggests that children aged 18 months will watch television for a certain period and have a verbal response to television, especially when exposed to quality educational programs. This response indicates that the learning process plays an important role even though what the child understands from television is far from what it should be. Interaction with adults plays an important role in improving language development. High television exposure means lowering interactions with adults. At the age of 24 months, the child can obtain information from television exposure, depending on the characteristics of the child, such as age and linguistic maturity. This will affect how the child responds to the television and what it gets from the television exposure. Children aged two years up to five years can also benefit from television exposure, depending on the quality of the program content, the compatibility of television program content with the age of the child, and the opportunity of interaction with the companion while watching. Children in this age group can build receptive language, expressive language, knowledge of letter sounds, and narrative knowledge. Children can also improve their understanding of familiar words from unaccompanied television exposure, while accompanied by a child's companion can improve language skills and understanding of unfamiliar words. (20) In contrast to previous evidence, it is stated that children with high television exposure may have low expressive language skills and possibility of speaking disorders. Although intermediate expressive language skills are associated with exposure to the child's television, the specific causes and effects of the relationship have not been identified.(20)

Summary

Language development in children is one of the important developmental sectors. There are several important things in the process of language development such as physical preparation, mental readiness, the existence of a good model to be imitated, the opportunity to practice, as well as motivation and guidance. Television is one of the most effective media in delivering its message. Repeated television exposure can affect children's language development. There is still controversy from several existing studies on the relationship between television exposure and language development.

Compliance with Ethical Standards

Funding: None

Conflict of Interest : None

References:

1. Soetjningsih. Konsep dasar tumbuh kembang anak. Dalam: Soetjningsih, Ranuh IGNG, penyunting. Tumbuh kembang anak. 2nd Edition. Jakarta: Penerbit Buku EGC; 2013. p. 3
2. Soetjningsih. Faktor-faktor yang mempengaruhi tumbuh kembang. Dalam: Soetjningsih, Ranuh IGNG, editor. Tumbuh kembang anak. 2nd Edition. Jakarta: Penerbit Buku EGC; 2013. p.61-8
3. Yunida firsta. Analisis strategi promosi PT televisi transformasi Indonesia (Trans TV) (manuscript).Bogor: Institut Pertanian Bogor. 2006. p.1-88
4. Imanto T. Antara televisi dan gaya hidup. Universitas Esa Unggul. 2012: 1-14
5. Linebarger DL, Walker D. Infants' and toddlers' television viewing and language outcomes. *Am Behav Sci.* 2005; 48,624-645
6. Christakis DA, Zimmerman FJ, DiGiuseppe DL, McCarty CA. Early television exposure and subsequent attentional problems in children. *Pediatrics.* 2004; 113:708-13
7. Zimmerman FJ, Christakis DA. Children's television viewing and cognitive outcomes: a longitudinal analysis of national data. *Arch Pediatr Adolesc Med.* 2005; 159:619-25
8. Zimmerman FJ, Christakis DA, Meltzoff AN. Associations between media viewing and language development in children under age 2 years. *J Pediatr.* 2007; 151:364-68
9. Schmidt ME, Rich M, Rifas-Schiman SL, Oken E, Taveras EM. Television viewing in infancy and child cognition at 3 years of age in a US cohort. *Pediatrics.* 2009; 123:370-75
10. Byeon H, Hong S. Relationship between Television Viewing and Language Delay in Toddlers: Evidence from aKorea National Cross-Sectional Survey. *Plos One.* 2015; 10: e0120663.
11. Marat S. Perkembangan Bahasa Seorang Anak (Suatu Tinjauan Psikolinguistik). Dalam: Munandar SCU, penyunting. Bunga Rampai Psikologi Perkembangan Pribadi dari Bayi Sampai Lanjut Usia. Jakarta: UI Press; 2001. h.59
12. Towne CC. Disorder of hearing, Speech and Language. *Nelson Textbook of Paediatrics.* Edisi Ke-12. Philadelphia: WB Saunders, 1983. h. 119-123
13. Setiawati D, Hasyim A, Yanzi H. Peranan orang tua mendampingi remaja menonton televisi terhadap kenakalan remaja di desa Bagelen Pesawaran. *Jurnal penelitian pendidikan.* 2012:1-14
14. Pitriawanti A. Pengaruh intensitas menonton televisi dan komunikasi orang tua-anak terhadap kedisiplinan dalam mentaati waktu belajar.(summary skripsi). Semarang: Universitas Diponegoro. 2010:1-11
15. Healy JM. Understanding TV's effects on the developing brain. *AAP News.* 1998. Available from: <http://www.brainy-child.com/article/tvonbrain.html>. Accessed on 2nd September 2018
16. Pearlmutter D. Brain Development: How Much TV Should Children Watch?. *The Huffington Post.* 2011. [cited 2011 May 25th]. Available from: http://www.huffingtonpost.com/dr-david-perlmutter-md/television-and-the-develo_b_786934.html. Accessed on 2nd September 2018
17. American Academy of Pediatrics Comitte on Publication Education. Children Adolescents, and Television. *Pediatrics.* 2001; 107:423-6.
18. Moore T. Early Brain Development. University of Iowa. 2002. Available from: www.uiowa.edu/~ournews/2002/september/0930child-health.html. Accessed on 2nd September 2018
19. Robinson TN, Wilde ML, Navracruz LC, Haydel KF, Varady A. Effects of Reducing Children's Television and Video Game Use on Aggressive Behavior: A Randomized Controlled Trial. *Arch Pediatr Adolesc Med.* 2001; 155: 17-23
20. Close R. Television and language development in the early years, a review of the literature. National literacy trust. 2004. Available at URL: <https://files.eric.ed.gov/fulltext/ED541608.pdf>. Accessed on 2nd September 2018
21. McLanahan S. Children and electronic media. *Future child.* 2008. Available at URL: https://futureofchildren.princeton.edu/sites/futureofchildren/files/media/children_and_electronic_media_18_01_fulljournal.pdf. Accessed on 2nd September 2018
22. Arraf S. An analysis of the effects of television viewing patterns, IQ, SES and gender on receptive and expressive language development of pre-school children. (doctoral dissertation). Michigan: Wayne State University. 1990.
23. Lemish Dafna, Rice M. Television as a talking picture book: a prop for language acquisition. *J Child Lang.* 1986; 13: 251-274.
24. Wright J, Huston A, Scantlin R, et al. The Early Window Project: Sesame Street prepares children for school, in Fisch, Shalom M, Truglio, Rosemarie T. (eds.) 'G' is for Growing: Thirty Years of Research on Children and Sesame Street. New Jersey: Lawrence Erlbaum Associates; 2001. p. 97-114.
25. Weber DS. Media Use by Infants and Toddlers: A Potential for Play, in Singer DG, Golinkoff RM, Hirsh-Pasek K. (eds.) *Play = Learning: How Play Motivates and Enhances Children's Cognitive and Social-Emotional Growth.* Oxford University Press; 2010.
26. Huesmann LR, Miller LS. Long-term effects of repeated exposure to media violence in childhood. In Huesmann LR (Ed.) *Aggressive Behavior: Current Perspective.* New York: Plenum Press; 1994. p. 153-186.
27. Rice ML, Huston AC, Truglio R, Wright JC. Words from Sesame Street: Learning vocabulary while viewing. *Dev Psychol.* 1990;26:421- 428.
28. Al Harbi SS. The Influence of Media in Children's Language Development. *J Educ Dev Psychol.* 2015; 5:1
29. Rice M. The words of children's television. *J Broadcast Electron.* 1984; 28, 445-461.
30. Selnow GW, Bettinghaus E. Television exposure and language development. *J Broadcast Electron.* 1982; 26, 469-479.
31. Krcmar M, Grela B, Lin K. Can Toddlers Learn Vocabulary from Television? An Experimental Approach. *Media Psychology.* 2007; 10: 41-63