Research Article

Level of Serum Brain-derived Neurotrophic Factor in Asthmatic Children

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Abstract
The human brain is a complex entity whose development is shaped not only by genetics but also by its environment. **Aim of work** The aim of this study is to evaluate the effect of screen media (television viewing, video and computer game playing and internet use) on cognitive function of children and to determine their prevalence in that category to help in putting effective treatment strategies. **Subjects and methods:** This study was done on 200 child of different socioeconomic status who were collected from pediatric outpatient clinic at Minia university hospital during period from September 2015 to July 2016. **Results:** This study was done on 200 child (91male- 109female) and was divided according to number of hours watching TV and using computer and internet into 3 groups.

Keywords: Neurotrophic Factor**,** human brain, Asthmatic Children

Introduction
The human brain is a complex entity whose development is shaped not only by genetics but also by its environment. (Stiles J, Jernigan TL 2010) It triples in volume in the first 2 years of life, building and pruning the connections that allow humans to perceive the world through their senses, think, make decisions, consider risk, build empathy and relationships, and engage in the whole range of human experience. Babies and children are building these capabilities as they grow. In particular, the pre-frontal cortex is often cited as the epicenter of the brain's higher-level executive functions, which include such tasks as "judgment, decision making and problem solving, as well as emotional control and memory." (Park M-H et al 2011)

The prefrontal cortex develops throughout childhood and adolescence in response to genetics and external stimuli, and it isn't completely formed until approximately age 26. (Fiorini M.2010).

Children's media targeting very young children has seen a rapid increase in recent years (Wartella, E. et al 2010) Research has linked increased amounts of television with increased levels of obesity for preschoolers and children (Frolich, K.L.et al., 2010) and has Suggested that screen time can have negative effects on children's development, particularly for infants and toddlers (Pagani, L.S. 2010).

As a result, organizations such as the Canadian Pediatric Academy of Pediatrics (2011) have issued recommendations calling for limiting preschooler children's daily screen time to one hour a day. (Canadian Pediatric Society 2003)

Aim of work
The aim of this study is to evaluate the effect of screen media (television viewing, video and computer game playing and internet use) on cognitive function of children and to determine their prevalence in that category to help in putting effective treatment strategies.

Subjects and methods
Subjects:
This study was done on 200 child of different socioeconomic status who were collected from pediatric outpatient clinic at Minia university hospital during period from September 2015 to July 2016

Inclusion Criteria:
1- Age range from 6 to 13 years so that WICS test can be applied as it is difficult to be done on children below 6 years.
2- Both sexes.
3- Child who used to go school.
4- Children of different socioeconomic status.

Exclusion Criteria:
1- Age below 6 and above 13 years.
2- Children with previous central nervous system pathology or multi-systemic disease known to affect central nervous system.
3- Children with psychiatric disorders.
4- Children suffering from any chronic illness.

Methods:
All enrolled children were subjected to the following:
1. Informed consent was taken from parents of all children participating in this study.
2. History taking

Full history taking, with emphasis on:
- Chronological age.
- Residence.
- Level of education.
- Number of daily hours spending on screen media.
- presence of TV or computer in childbed room or not.
- type of programs they watch on TV and type of video game they play.
- If they watch cartoon or not.

Results

This study was done on 200 child (91 male- 109 female) and was divided according to number of hours watching TV and using computer and internet into 3 groups:
Group (I): watching TV 2-3hs and using computer and internet 1-2hs
Group (II): watching TV 3-5hs and using computer and internet (2-3hs)
Group (III): watching TV >5hs and using computer and internet >3hs (Takeuchi Hikaru, et al., 2013)

We tested their cognitive function by WISC tests and EEG was done for children with the worst cognitive function.

Table 1: Demographic and clinical data of studied cases.

Parameter		**Description(200 cases)**
Age (ys), mean ± SD (range)		9.6 ± 3.1 (6 - 13)
Age	**6-8 years**	58 (29.0%)
	9 years	52 (26.0%)
	10 years	37 (18.5%)
	11 years	33 (16.5%)
	12-13 years	20 (10.0%)
Weight (kg), mean ± SD (range)		28.3 ± 4.9 (19 - 40.0)
Body mass index mean BMI ± SD		18.2 ± 2.7
Gender	**Male**	91 (45.5%)
	Female	109 (55.5%)
Residence	**Urban**	200 (100.0%)
	Rural	0

Discussion

Nowadays, young children are using more screen media than ever before. There is a broad debate over the implications of screen media experience on children's cognitive development. By the age of two years, kids have seen enough screen media to realize that it can be a source of information relevant to themselves and are more able to pay attention to and learn from it. Over the course of childhood, children spend more time watching TV than they do in school, (Zimmerman, F.J. et al, 2007a)

The American Academy of Pediatrics (AAP) issued guidelines recommending that children under the age of two years watch no screen entertainment at all because television 'can negatively affect early brain development' (AAP,1999) In 2006 they issued another statement on 'TV and Toddlers': 'It may be tempting to put your infant or toddler in front of the television, especially to watch shows created just for children under age two. But the American Academy of Pediatrics says: Don't do it! These early years are crucial in a child's development.

The Academy is concerned about the impact of television programming intended for children younger than age two and how it could affect your child's development.' And in late 2011 they've gone further 'media-both fore-ground and background-have potentially negative effects and no known positive effects for children younger than 2 years.' (AAP, 2011) Despite these recommend-dations, many studies in the last ten years have shown most of children surpass this recommended exposure time. (Gingold, J. et al., 2014)

Recommendations

• We should encourage no screens in children's bedrooms. If you put a refrigerator in a child's bedroom they will eat more, if you put a screen in their bedroom they will watch more.

In short, there is nothing to be lost by children watching less screen media but potentially a great deal to be lost by allowing children to continue to watch as much as they do. By ignoring the growing body of evidence linking screen time with child health we may ultimately be responsible for the greatest health scandal of our time.

It seems that the best approach to take is to limit children's screen time, and if/when they do watch TV, to carefully examine the shows they watch for how they promote thinking, language development,

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