

## COMMENTARY

# Health Hazards of Electronic Media Devices in Children

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### ABSTRACT:

Use of electronic devices among children is common and is increasing day by day. Exposure to electronic devices such as television, computer and cell phones is documented to be associated with lot of adverse health effects. The problems encountered in children are sleep difficulties, bad dietary habits, lower physical activity, obesity, appearance of psychological symptoms including depression, lack of social interaction etc. Parents need to be counseled regarding adverse health effects and limiting the screen time of their children to these electronic devices.

**Keywords:** Electronic devices, Children, Health hazards, Screen time.

### INTRODUCTION:

One of the notable changes in the 21<sup>st</sup> century has been the saturation of our daily lives by the mass media. Use of electronic devices among children has become common due to this saturation and is increasing day by day. Unfortunately the consequence of this use is a detrimental effect on the health of our children both pre-school and school going kids. Parents make their utmost effort to prevent exposure of their kids to “bad” friends in the neighborhoods or on the street, in the parks, play areas and even at school so as to raise them as good human beings. However they are ignoring the fact that they themselves are providing a “virtual” bad neighborhood and street to their kids in their very homes. Electronic media devices usage is especially common in school children. Their multi-functionality means that they may be used for independent play in the same way as television viewing (e.g as a babysitter, independent quiet time), or more purposefully for learning through games and through computer skill development at day cares and schools. Many studies have indicated that electronic media use may affect the health of children by effecting their sleep, food intake, social interactions, behavior and body weight. Their excessive usage can also lead to time pressure and mental overload.<sup>1</sup>

**Effect on sleep:** There is a strong relationship between sleep and electronic media usage in children and adolescents. Many effects have been observed across the world, although delayed bedtime and shorter total

sleep time have been found to be most consistent related to electronic media devices use. In one of a study, it was found that, computer gaming before going to bed increased sleep latency and heart rate, and decreased child’s sleepiness and rapid eye movement (REM) sleep.<sup>2,3</sup>

**Effect on food intake:** Increased time in front of the television / computer screen is also associated with intake of food, especially with low intake of fruits and vegetables and excessive intake of high-calorie foods particularly high amount of fats, carbohydrates and salt. It also influences the demands of foods, as the children are exposed to unhealthy and junk food advertisements. Some studies have also indicated an association with eating disorders.<sup>4</sup>

**Effect on social interaction:** Electronic media devices could have negative impacts on family interactions depending on how they are used. It has been observed that mobile devices can distract parents from face-to-face interactions with their children, which are crucial for cognitive, language, and emotional development. Bickham investigated the relationship between TV viewing time, content, context, and peer integration. As children spend more total time watching TV, they spend a significantly shorter amount of time with friends as compared to those who don’t. Thus, viewing television causes poor peer relationships and thereby increases the risk for social isolation, anxiety disorder, agoraphobia and antisocial behavior, including aggression and gang involvement.<sup>5</sup>

**Effect on behavior:** Excessive electronic media usage can have effect on behavior of children. Exposure to media violence is related to subsequent aggressive behavior, ideas, arousal, and anger. Additionally, there is a significant negative effect of exposure to violence on subsequent helping behavior. Infrequent exposure is not likely to produce lasting consequences, but parents, particularly need to be urged to protect their children against the kinds of repeated exposures that excessive play with violent video games or immersion in violent TV programs.<sup>6</sup>

**Effect on body weight:** An experimental study by Robinson has found a strong evidence of a causal link between TV viewing and children being overweight. Stettler showed a significant association between electronic game use and obesity, with nearly a 2-fold increased risk of obesity for every hour spent playing electronic games daily. An inverse relationship between time spent using video games and daily physical activity

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has also been observed. The mechanism of effect of TV exposure on overweight risk is undoubtedly multi-factorial. It appears to operate independently from reduced physical activity. Excessive TV exposure may instead operate through the extensive advertising messages for unhealthy foods targeted at very young children or from a tendency of children to snack while watching TV. A randomized controlled trial found that increasing screen time resulted in reduced energy expenditure and increased energy intake.<sup>7</sup>

**Mental overload and time pressure:** Consequences of computer use included spending more time than planned at the computer (e.g. working, gaming, or chatting), leading to time pressure, neglect of other activities and personal needs (e.g. breaks, physical activity, social interaction, sleep), exposure to bad ergonomics, and mental overload. Chatting or emailing interrupted other tasks, with difficulties filtering important from unimportant messages, leading to mental overload. Getting stuck in what was perceived as unproductive activities, such as game playing, or “gaming” is another concern.<sup>8</sup>

**Guidelines regarding screen time in children:** The American Academy of Pediatrics recommends that the screen time for children (especially children of preschool age) should not be more than two hours per day that includes watching televisions, use of computers, phones, tablets and other electronic devices. However, a study at the University of Washington of 8950 children under the age of 5 has found that 66% exceeded that limit, spending an average of 4.1 h of daily screen time, 90% of which came at home.<sup>9</sup> Australian and Canadian guidelines suggest that children between 2 and 5 years of age should have less than 1 hour of screen-viewing time per day.<sup>10</sup> In the UK, there are no specific government guidelines of daily screen-viewing time for young children, only that screen-viewing should be minimized.<sup>11</sup>

Parents’ perspectives of their child’s screen-viewing have been explored in various qualitative studies.<sup>12,13</sup> Majority of the parents believe that electronic media devices use for children is acceptable in moderation and if appropriately balanced with other activities.<sup>14,15</sup>

However, setting limits for this moderation and or balance needs highlighting at different forums to create awareness in the parents that use of electronic devices is linked with health hazards and should not be allowed at the expense of their children’s health.

### CONCLUSION:

Use of electronic devices by children can influence their health related to sleep, food, social interactions, physical activity behavior etc. Educational programs are recommended to increase awareness among parents regarding the adverse effects of electronic devices use and limiting their screen time.

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